Ref.NO.3654
082000

ONKYO SERVICE MANUAL

CD RECEIVER
MODEL CR-305X



Silver models

UDD,UDT	120 V AC,60 Hz
UPP	230 V AC,50 Hz
UGT,UGR	220 - 230 V AC,50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FORM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO® AUDIO COMPONENTS

TABLE OF CONTENTS

SPECIFICATIONS

AMPLIFIER

Power Output:	2 x 20 watts at 4 ohms 1 kHz DIN 2 x 17 watts at 6 ohms 1 kHz DIN 2 x 15 watts at 8 ohms 1 kHz DIN 2 x 20 watts min, RMS at 4 ohms 1 kHz **no more than 1 % THD (FTC rating)** 2 x 25 watts at 4 ohms EIAJ
Dynamic Power:	2 x 24 watts at 4 ohms 2 x 18 watts at 8 ohms
Total Harmonic Distortion:	0.2 % at 10 watts output
IM Distortion:	0.2 % at 10 watts output
Damping Factor:	25 at 8 ohms
Sensitivity and Impedance:	TAPE/CDR/MD IN : 150 mV, 50 kohms
Frequency Response:	10 to 50,000 Hz : +0 / –3 dB
Acoustic Presence:	1 40 Hz +6.0 dB 2 80 Hz +7.5 dB 3 40 Hz +10 dB 80 Hz +8.0 dB 4 40 Hz +10 dB 80 Hz +8.0 dB 10 kHz +4.5 dB
Single–to–Noise Ratio:	100 dB (IHF A)
Muting	–55 dB

CD PLAYER

Signal Readout System:	Optical non–contact
Reading Rotation:	About 500 – 200 r.p.m. (constant linear velocity)
Linear Velocity:	1.2 – 1.4 m / s
Error Correction System:	Cross Interleave Reed Solomon code
D / A Converter:	1 bit
Digital Filter:	352.8 kHz 8 times over sampling
Number of Channels:	2 (stereo)
Frequency Response:	5 Hz – 20 kHz

TUNER

Tuning range
FM: 87.9 to 107.9 MHz (200 kHz steps) (U.S. & Canadian models)
87.5 to 108.00 MHz (50 kHz steps) (Other area models)
AM: 530 to 1710 kHz (10 kHz steps) (U.S. & Canadian models)
522 to 1611 kHz (9 kHz steps) (Other area models)

Usable sensitivity
FM: Mono 11.2 dBf, 1.0 µV (75 ohms IHF), 0.9 µV (75 ohms DIN)
Stereo 17.2 dBf, 2.0 µV (75 ohms IHF), 23.0 µV (75 ohms DIN)
AM: 30 µV

50 dB Quieting sensitivity
FM: Mono 17.2 dBf, 2.0 µV (75 ohms)
Stereo 37.2 dBf, 20.0 µV (75 ohms)

Capture ratio
FM: 2.0 dB

Image rejection ratio
FM: 40 dB (U.S. & Canadian models)
85 dB (Other area models)
AM: 40 dB

IF rejection ratio
FM: 90 dB
AM: 40 dB

Signal to noise ratio
FM: Mono 73 dB, IHF
Stereo 67 dB, IHF
AM: 40 dB

Selectivity
FM: 50 dB DIN
(±300 kHz at 40 kHz Devi.)

AM Suppression Ratio: 50 dB

Harmonic distortion
FM: Mono 0.2%
Stereo 0.3%
AM: 0.7 %

Frequency response
FM: 30 to 15,000 Hz (±1.5 dB)

Stereo separation
FM: 35 dB at 1,000 Hz
25 dB at 100 to 10,000 Hz

Stereo threshold
FM: 17.2 dBf, 2.0 µV (75 ohms)

GENERAL

Power Supply:	AC 120 V, 60 Hz (U.S. & Canadian models) (Some Asian models) AC 230 V, 50 Hz (European models) AC 220-230 V, 50/60 Hz (Other area models)
Power Consumption:	60 W (U.S. & Canadian models) (Some Asian models) 55 W (Other area models)
Dimensions:	205 W x 103 H x 362 D mm (8-1/6" x 4-1/16" x 14-1/4")
Weight:	4.0 kg (8.8 lbs)

Specifications and features are subject to change without notice
Power supply and voltage vary depending on the area in which the unit is purchased.

CAUTION ON REPLACEMENT OF OPTICAL PICKUP

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc., that the components are liable to be broken down or its reliability remarkably deteriorated.

During repair,carefully take the following precautions. (The following precautions are included in the service parts.)

PRECAUTIONS

1. Ground for the work-desk.
   Place a conductive sheet such as a sheet of copper (with impedance lower than 10Mohm) on the work-desk and place the set on the conductive sheet so that the chassis can be grounded.
2. Grounding for the test equipments and tools.
   Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.
3. Grounding for the human body.
   Be sure to put on a wrist-strap for grounding whose other end is grounded.
   Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.
4. Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.
5. Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

SERVICE WARNING : DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY.

IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

Laser Diode Properties

Material: GaAS/GaALAs
Wavelength: 780nm
Laser output: max. 0.5mW*
Emission Duration: continuous
*This output is the value measured at a distance about 1.8mm from the objective lens surface on the Optical Pick-up Block.

LASER WARNING LABEL

The label shown below are affixed.

1. Warning label



1. Class 1 label

"CLASS 1 LASER PRODUCT"

LUOKAN 1
LASERLAITE

KLASS 1
LASER APPARAT

SERVICE PROCEDURE

1. Replacing the fuses

 This symbol located near the fuse indicates that the fuse used is show operating type, For continued protection against fire hazard, replace with same type fuse , For fuse rating, refer to the marking adjest to the symbol.

 Ce symbole indique que le fusible utilise est e lent. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce demier est indique la qu le present symbol est apposre.

REF.NO.	PART NO.	DESCRIPTION
F901	252157 ⚠	1.25A-UL/T-237, Fuse <D, DT>
	252083 ⚠	0.4A-SE-EAW, FUSE <P,GR, GT>

NOTE : <D, DT> : 120 V model only
<P,GR, GT> : 230 V model only

2. To initialize the unit

1. Press and the hold down the MEMORY button , then press the After "all lighting " is displayed
2. Press the standby/on button.
   After " CLEAR " is displayed, the preset memory and each mode stored in the memory, are initialized and will return to the factory settings.

3. Safety-check out

(Only U.S.A. model)
After correcting the original service problem perform the follwing safety check before releasing the set to the customer Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel.
Specifications: More than 10Mohm at 500V

4. Memory Preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is un-plugged. The unit must be plugged in order to charge the back-up system.
The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged. This pe-riod is shorter when the unit is exposed to a highly humid cli-mate.

5. Changing the AM band step

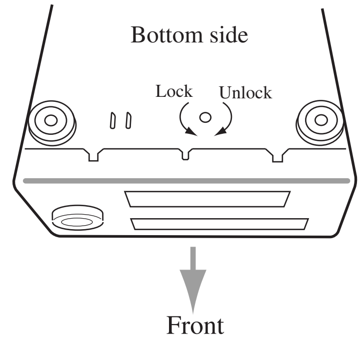
With the exception of the worldwide models, a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

	To 10kHz	To 9kHz
R705	3.3k	10k
R706	5.6k	open

5. Removement of tray

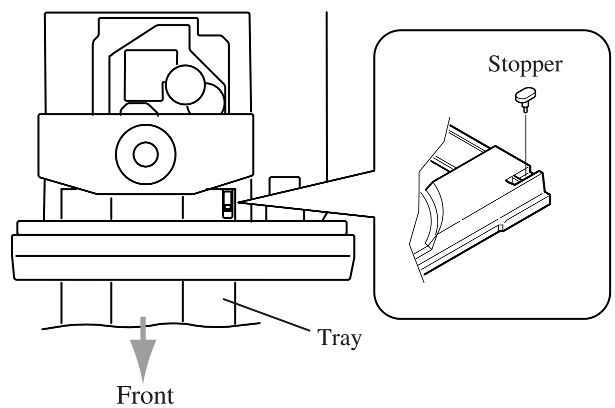
1.Remove the top cover
2.Turn the locked screw to the clockwise to release the lock of gear. (Refer to fig-1)

Fig-1



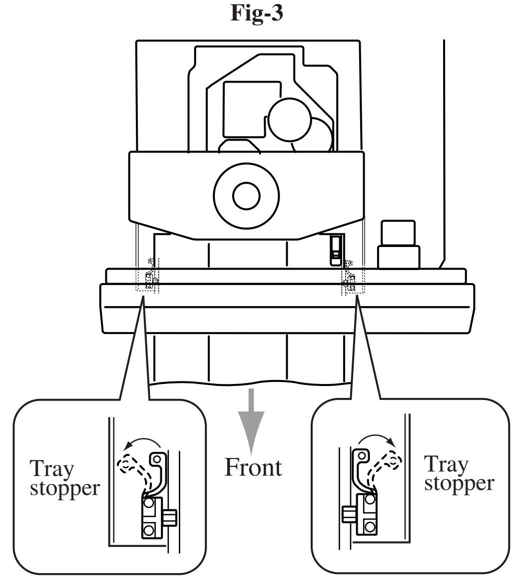
3.Pull out the tray.
4.Remove the stopper. (Refer to fig-2)

Fig-2

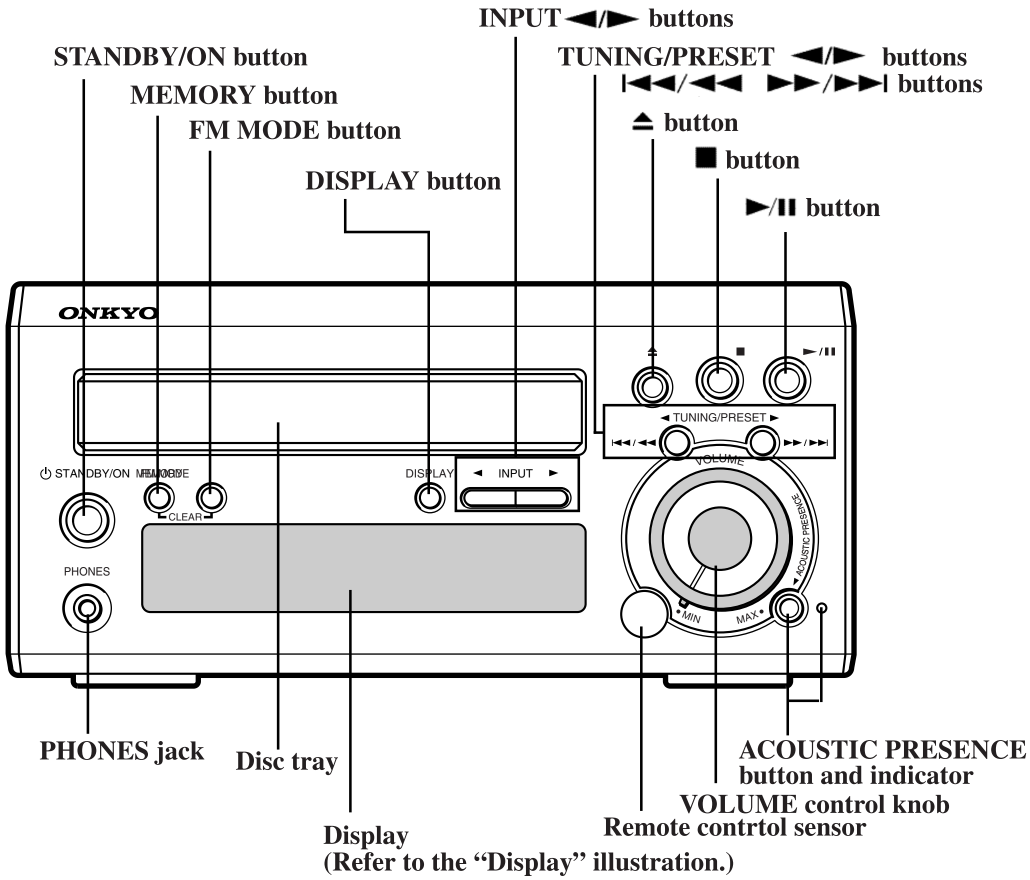


5.Press teh tray stopper to the arrow mark direction and remove the tray ass'y. (Refer to fig-3)

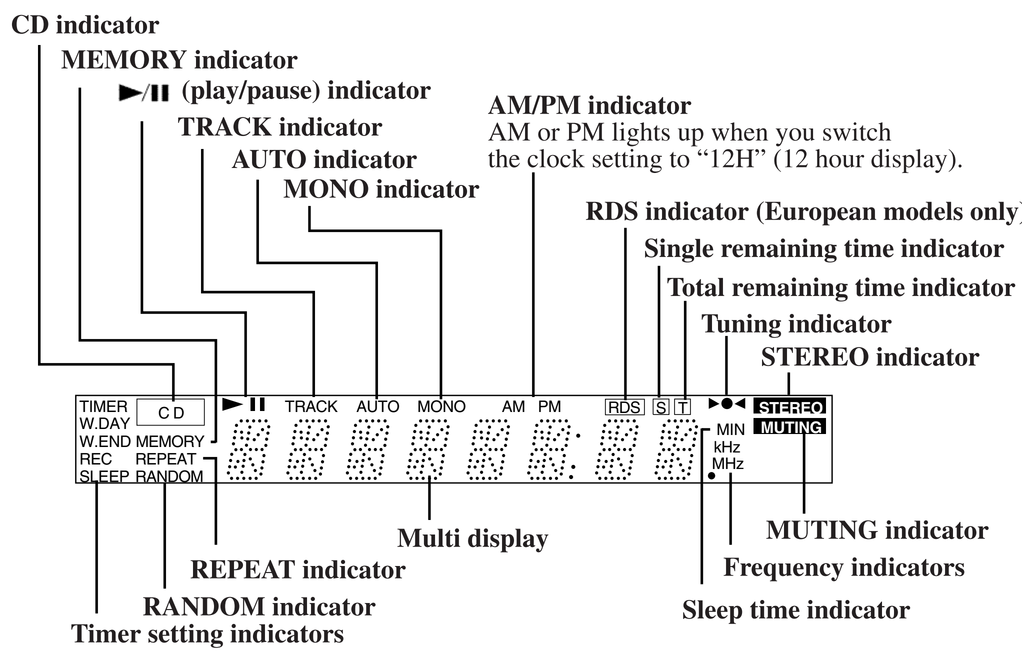
Fig-3



FRONT PANEL VIEW

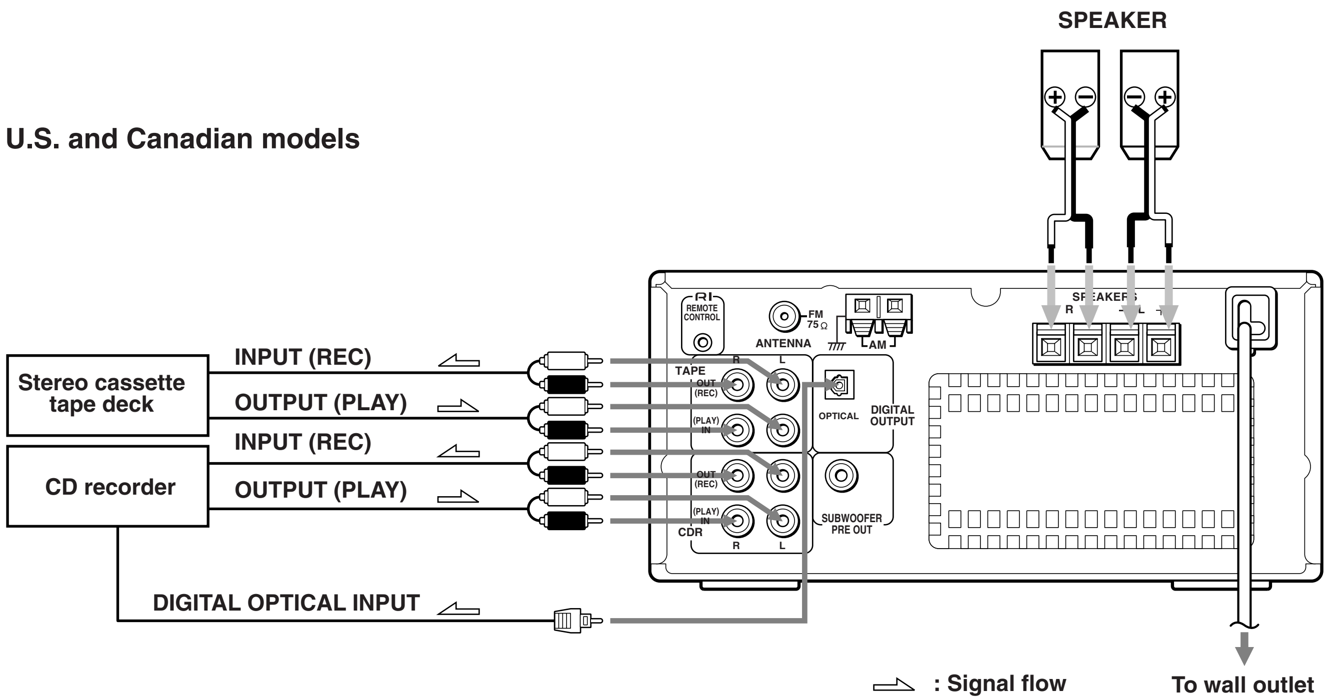


DISPLAY

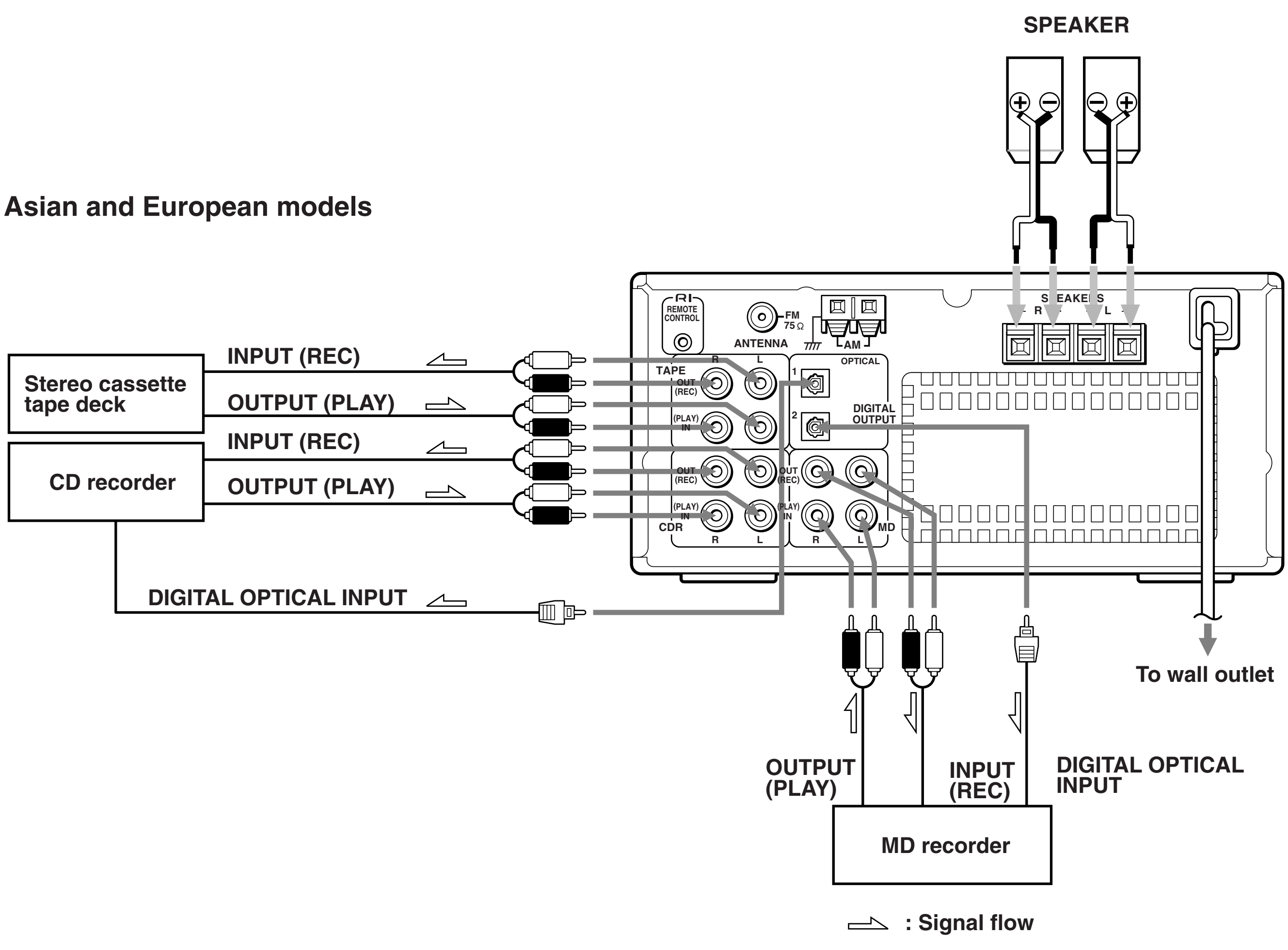


REAR PANEL VIEW

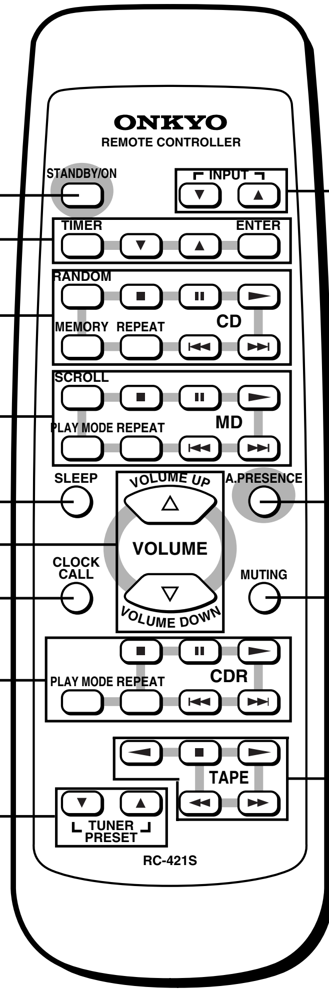
U.S. and Canadian models



Asian and European models



REMOTE CONTROLLER : RC-421S



STANDBY/ON button
Toggles between STANDBY and ON.

TIMER operation buttons
Enables you to make the settings of the clock, timer playback and recording.

CD operation buttons

MD operation buttons

SLEEP button
Enables you to make the sleep time setting.

VOLUME ▲ (UP)/▼ (DOWN) buttons
Enables you to increase or decrease the volume level.

CLOCK CALL button
Enables you to display the current time.

CDR operation buttons

TUNER PRESET ▼ / ▲ buttons
Enables you to select the PRESET stations.

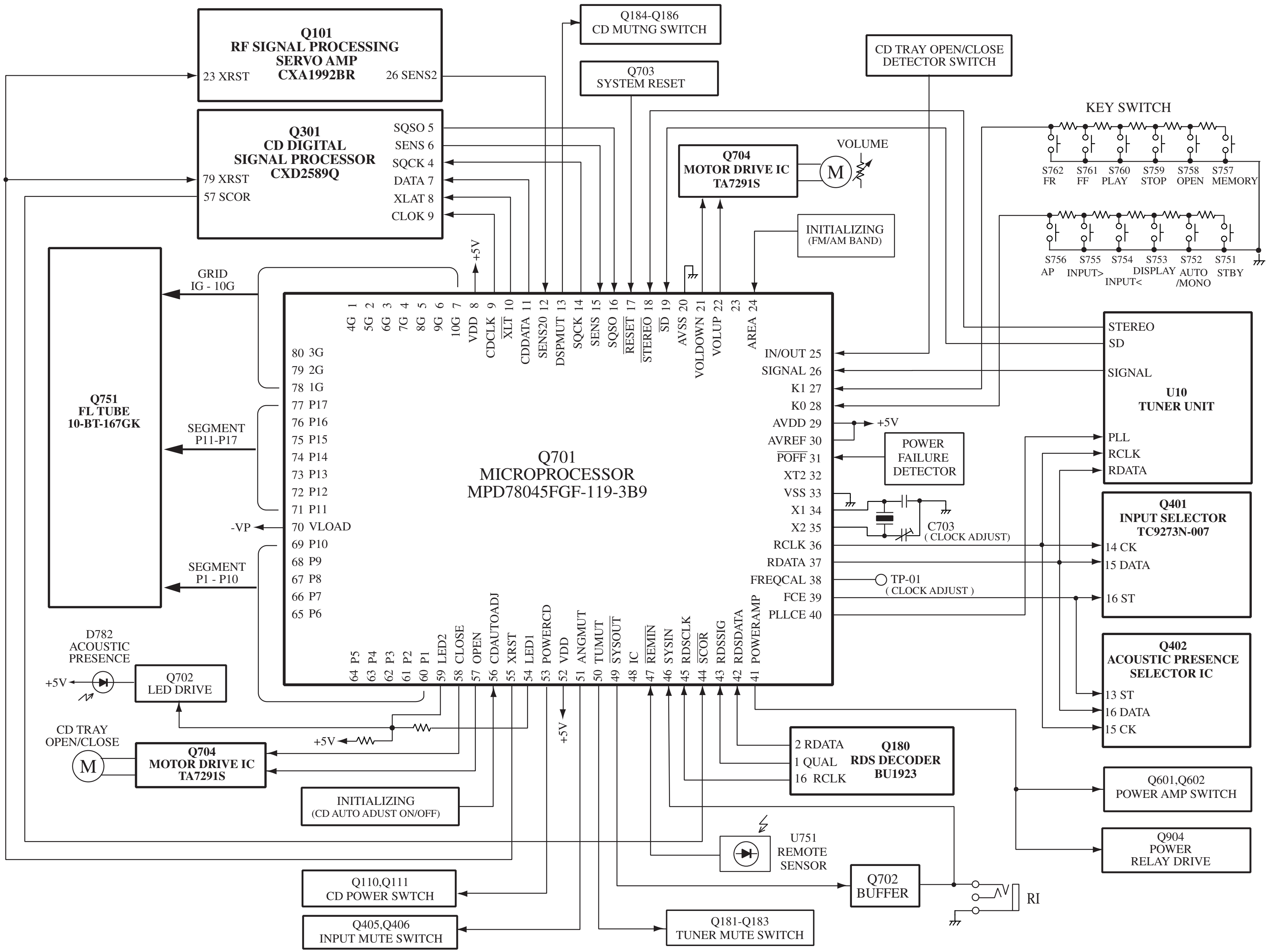
INPUT ▲ / ▼ buttons
Enables you to select a listening source.

A. PRESENCE button
Enables you to switch acoustic presence off and types.

MUTING button
Enables you to mute the sound temporarily.

TAPE operation buttons

MICROPROCESSOR CONNECTION DIAGRAM



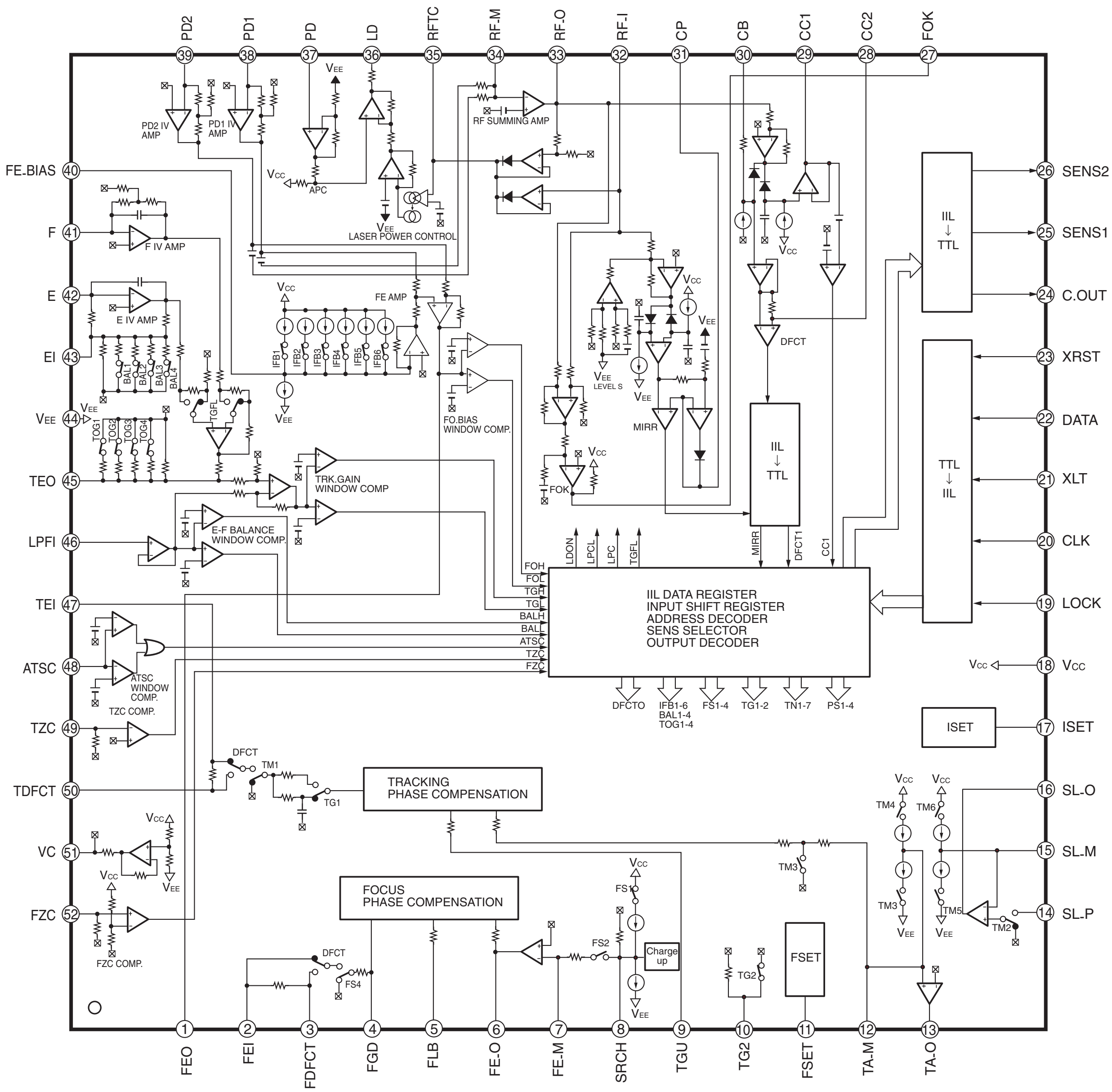
MICROPROCESSOR TERMINAL DESCRIPTION (Q701 : MPD78042GF-3B9)

NO.	Function	I/O	Description
1	4G	O	
2	5G	O	
3	6G	O	
4	7G	O	Grid output pins. (4G～10G)
5	8G	O	
6	9G	O	
7	10G	O	
8	VDD	I	Power supply pin.
9	CDCLK	O	Command output pin to transfer the clock signal to signal processing IC(CXD2589Q).
10	XLT	O	Command output pin to transfer the latch signal to signal processing IC(CXD2589Q).
11	CDDATA	O	Command output pin to transfer the data signal to signal processing IC(CXD2589Q).
12	SENS20	I	Sense signal input pin from servo IC(CXA1992)
13	DSPMUT	O	Digital mute output pin to signal processing IC(CXD2589Q).
14	SQCK	O	Subcode reading clock output pin to signal processing IC(CXD2589Q).
15	SENS	I	Sense signal input pin from signal processing IC(CXD2589Q).
16	SQSO	I	Subcode data input pin from signal processing IC(CXD2589Q).
17	RESET	I	System reset input pin.
18	STEREO	I	FM stereo broadcast detection input pin.
19	SD	I	Broadcast detection input pin.
20	AVSS	I	Ground pin for A/D converter.
21	VOLDOWN	O	Volume control output pin.
22	VOLUP	O	Volume control output pin.
23		-	Not used.
24	AREA	I	Initialization input pin for destination switch.
25	IN/OUT	I	Input pin for CD tray open/close detection switches.
26	SIGNAL	I	Signal level input pin for automatic memory.
27	K1	I	Operation key connection pin.
28	KO	I	Operation key connection pin.
29	AVDD	I	Power supply pin for A/D converter.
30	AVREF	I	Reference voltage input pin for A/D converter.
31	POFF	I	Power failure input pin.
32	XT2	O	Sub clock connection pin. Not used.
33	VSS	I	Gound pin.
34	X1	I	Master clock connection pin.
35	X2	I	Master clock connection pin.
36	RCLK	O	Serial clock output pin to PLL and function switch ICs (TC9273,TC9162).
37	RDATA	O	Serial data output pin to PLL and function switch ICs(TC9273,TC9162).
38	FREQCAL	O	Frequency output terminal for clock adjustment
39	FCE	O	Serial latch output pin to function switch ICs(TC9273,TC9162).
40	PLLCE	O	Serial latch output pin to PLL IC.
41	POWER AMP	O	Output pin for power supply control of power amplifier
42	RDSDATA	I	Data input pin from RDS decoder IC.
43	RDSSIG	I	Signal input pin from RDS decoder IC.
44	SCOR	I	Sub code frame detection input pin from signal processing IC(CXD2589Q).
45	RDSSCK	I	Clock input pin from RDS decoder IC.
46	SYSIN	I	System code input pin.
47	REMIN	I	Signal input pin for remote controller.
48	IC	I	Internal connection pin. Not used.
49	SYSOUT	O	System code output pin.
50	TUMUT	O	Muting control signal output pin for tuner section.
51	ANGMUT	O	Muting control signal output pin for amplifier section.
52	VDD	I	Power supply pin.
53	POWERCD	O	Output pin for power supply control of CD section.
54	LED1	O	Acoustic presence indicator (red) control output pin.
55	XRST	O	Reset signal output pin of signal processing IC and servo IC.
56	CDAUTOADJ	I	Set pin of self adjustment ON/OFF of CD
57	OPEN	O	CD tray open control output pin.
58	CLOSE	O	CD tray close control output pin.
59	LED2	O	Acoustic presence indicator (green) control output pin.
60	P1		
61	P2		
62	P3		
63	P4		
64	P5		Segment output pins. (P1～P11)
65	P6		
66	P7		
67	P8		
68	P9		
69	P10		
70	P11		
71	VLOAD		Power supply pin for FL tube.
72	P12		
73	P13		
74	P14		Segment output pins. (P12～P17)
75	P15		
76	P16		
77	P17		
78	1G		
79	2G		Grid output pins. (1G～3G)
80	3G		

IC BLOCK DIAGRAM AND DESCRIPTIONS

Q101:CXA1992BR (RF Signal Processing Servo Amplifier)

Block Diagram

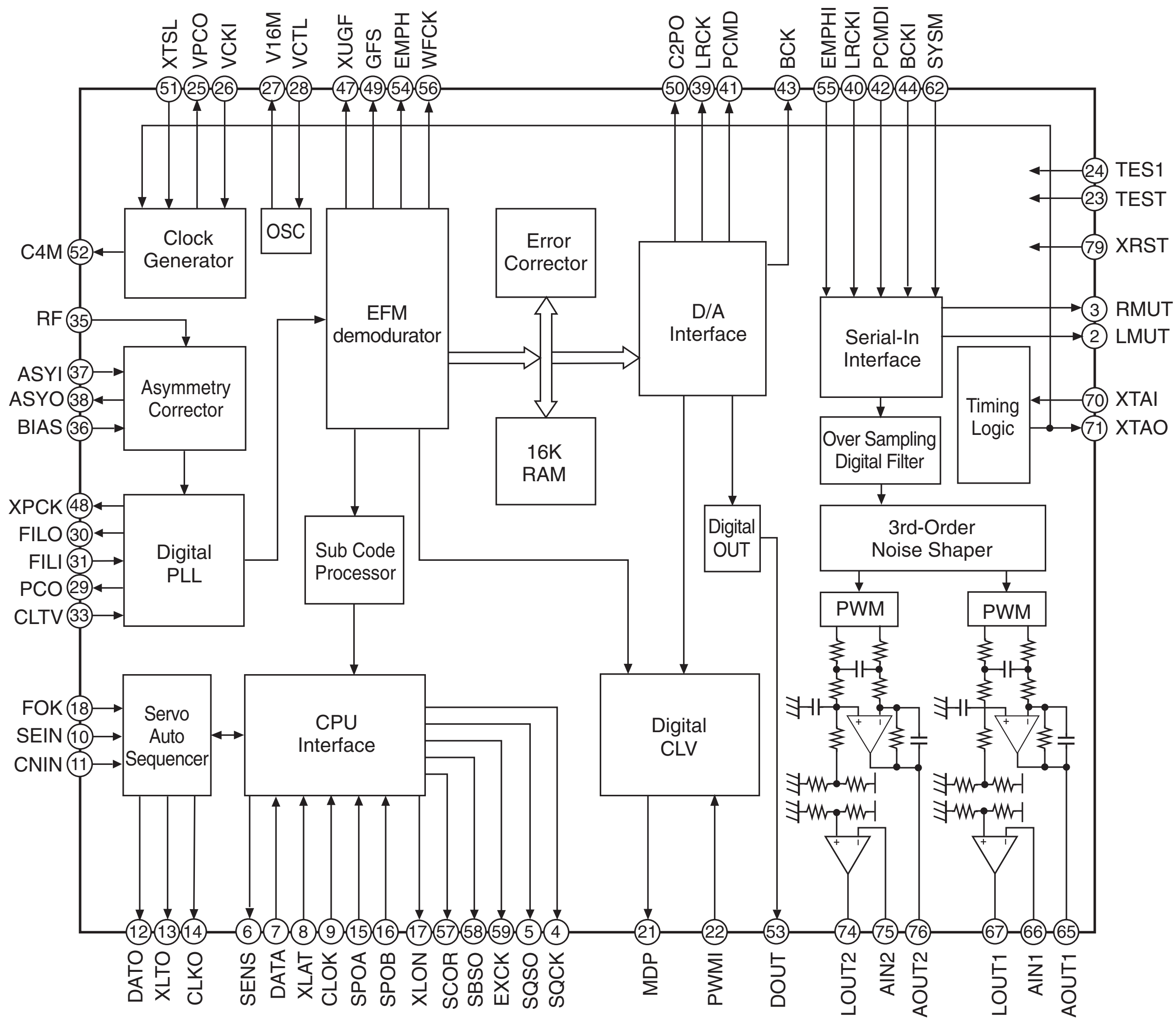


Terminal description

Pin No.	Symbol	I/O	Description
1	FEO	O	Focus error amplifier output. Connected internally to the window comparator input for bias adjustment.
2	FEI	I	Focus error input.
3	FDFCT	I	Capacitor connection pin for defect time constant.
4	FGD	I	Ground this pin through a capacitor for cutting the focus servo high-frequency gain.
5	FLB	I	External time constant setting pin for boosting the focus servo low-frequency.
6	FE_O	O	Focus drive output.
7	FE_M	I	Focus amplifier inverted input.
8	SRCH	I	External time constant setting pin for generating focus search waveform.
9	TGU	I	External time constant setting pin for switching tracking high-frequency gain.
10	TG2	I	External time constant setting pin for switching tracking high-frequency gain.
11	FSET	I	Peak frequency setting pin for focus and tracking phase compensation amplifier.
12	TA_M	I	Tracking amplifier inverted input.
13	TA_O	O	Tracking drive output.
14	SL_P	I	Sled amplifier non-inverted input.
15	SL_M	I	Sled amplifier inverted input.
16	SL_O	O	Sled drive output.
17	ISET	I	Connect an external capacitance to set the current which determines the Focus search, Track jump, and Sled kick heights.
18	VCC	I	Positive power supply.
19	LOCK	I	The sled overrun prevention circuit operates when this pin is Low. (no pull-up resistance)
20	CLK	I	Serial data transfer clock input from CPU. (no pull-up resistance)
21	XLT	I	Latch input from CPU. (no pull-up resistance)
22	DATA	I	Serial data input from CPU. (no pull-up resistance)
23	XRST	I	Reset input; resets at Low. (no pull-up resistance)
24	C. OUT	O	Track number count signal output.
25	SENS1	O	Outputs FZC, DFCT1, TZC, BALH, TGH, FOH, ATSC, and others according to the command from CPU.
26	SENS2	O	Outputs DFCT2, MIRR, BALL, TGL, FOL, and others according to the command from the CPU.
27	FOK	O	Focus OK comparator output.
28	CC2	I	Input for the defect bottom hold output with capacitance coupled.
29	CC1	O	Defect bottom hold output. Connected internally to the interruption comparator input.
30	CB	I	Connection pin for defect bottom hold capacitor.
31	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inverted input.
32	RF_I	I	Input for the RF summing amplifier output with capacitance coupled.
33	RF_O	O	RF sunning amplifier output. Eyepattern check point.
34	RF_M	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.
35	RFTC	I	External time constant setting pin during RF level control.
36	LD	O	APC amplifier output.
37	PD	I	APC amplifier input.
38	PD1	I	RF I-V amplifier inverted input. Connect these pins
39	PD2	I	to the photo diode A + C and B + D pins.
40	FE_BIAS	I	Bias adjustment of focus error amplifier. Leave this pin open for automatic adjustment.
41	F	I	F I-V and E I-V amplifier inverted input.
42	E	I	Connect these pins to photo diodes F and E.
43	EI	—	I-V amplifier E gain adjustment. (When not using automatic balance adjustment)
44	VEE	—	Negative power supply.
45	TEO	O	Tracking error amplifier output. E-F signal is output.
46	LPFI	I	Comparator input for balance adjustment. (Input from TEO through LPF)
47	TEI	I	Tracking error input.
48	ATSC	I	Window comparator input for ATSC detection.
49	TZC	I	Tracking zero-cross comparator input.
50	TDFCT	I	Capacitor connection pin for defect time constant.
51	VC	O	(VCC + VEE)/2 direct voltage output.
52	FZC	I	Focus zero-cross comparator input.

Q301:CXD2589Q (CD Digital Signal Processor)

Bloch Diagram

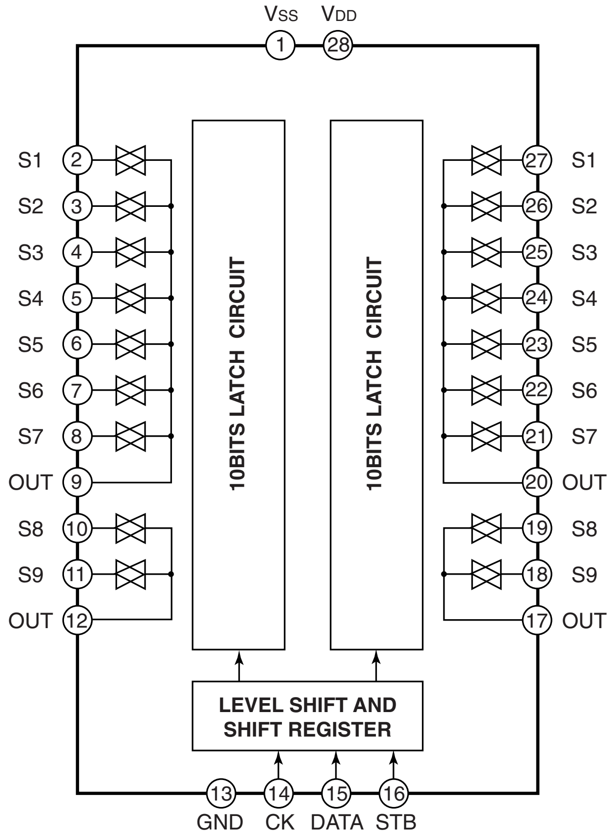


Terminal description

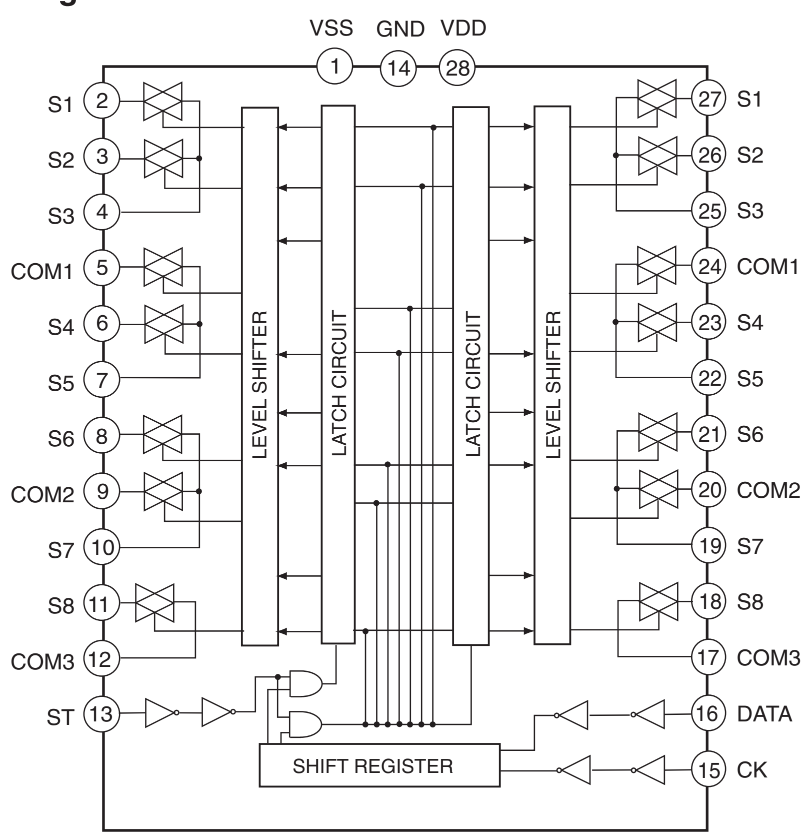
Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	VSS	—	GND	43	BCK	O	D/A interface. Bit clock output.
2	LMUT	O	Left-channel zero detection flag.	44	BCKI	I	D/A interface. Bit clock input.
3	RMUT	O	Right-channel zero detection flag.	45	VSS	—	GND
4	SQCK	I	SQSO readout clock input.	46	VDD	—	Power supply (+5V).
5	SQSO	O	Sub Q 80-bit serial output.	47	XUGF	O	XUGF output. Switched to MNT1 or RFCK output by a command.
6	SENS	O	SENS output to CPU.				
7	DATA	I	Serial data input from CPU.	48	XPCK	O	XPLCK output. Switched to MNT0 output by a command.
8	XLAT	I	Latch input from CPU. Serial data is latched at the falling edge.				
				49	GFS	O	GFS output. Switched to MNT3 or XRAOF output by a command.
9	CLOK	I	Serial data transfer clock input from CPU.				
10	SEIN	I	SENS input from SSP.	50	C2PO	O	C2PO output. Switched to GTOP output by a command.
11	CNIN	I	Track jump count signal input.				
12	DATO	O	Serial data output to SSP.	51	XTSL	I	Crystal selector input. Low: 16.9344MHz; high: 33.8688MHz.
13	XLTO	O	Serial data latch output to SSP. Latched at the falling edge.				
				52	C4M	O	4.2336MHz output. 1/4 frequency-divided VCKI output in CAV-W mode.
14	CLKO	O	Serial data transfer clock output to SSP.				
15	SPOA	I	Microcomputer extended interface (input A).	53	DOUT	O	Digital Out output.
16	SPOB	I	Microcomputer extended interface (input B).	54	EMPH	O	Outputs a high signal when the playback disc has emphasis, and a low signal when there is no emphasis.
17	XLON	O	Microcomputer extended interface (output).				
18	FOK	I	Focus OK input. Used for SENS output and the servo auto sequencer.	55	EMPHI	I	Inputs a high signal when de-emphasis is on, and a low signal when de-emphasis is off.
19	VDD	—	Power supply (+5V).	56	WFCK	O	WFCK output.
20	VSS	—	GND	57	SCOR	O	Outputs a high signal when either subcode sync S0 or S1 is detected.
21	MDP	O	Spindle motor servo control.				
22	PWMI	I	Spindle motor external control input.	58	SBSO	O	Sub P to W serial output.
23	TEST	I	TEST pin; normally GND.	59	EXCK	I	SBSO readout clock input.
24	TES1	I	TEST pin; normally GND.	60	VSS	—	GND
25	VPCO	O	Charge pump output for the wide-band EFM PLL.	61	VDD	—	Power supply (+5V).
26	VCKI	I	VCO2 oscillation input for the wide-band EFM PLL.	62	SYSM	I	Mute input. Active when high.
27	V16M	O	VCO2 oscillation output for the wide-band EFM PLL.	63	AVSS	—	Analog GND.
				64	AVDD	—	Analog power supply (+5V).
28	VCTL	I	VCO2 control voltage input for the wide-band EFM PLL.	65	AOUT1	O	Left-channel analog output.
				66	AIN1	I	Left-channel operational amplifier input.
29	PCO	O	Master PLL charge pump output.	67	LOUT1	O	Left-channel LINE output.
30	FILO	O	Master PLL (slave = digital PLL) filter output.	68	AVSS	—	Analog GND.
31	FILI	I	Master PLL filter input.	69	XVDD		Power supply for master clock.
32	AVSS	—	Analog GND.	70	XTAI	I	Crystal oscillation circuit input. Input the external master clock via this pin.
33	CLTV	I	Master VCO control voltage input.				
34	AVDD	—	Analog power supply (+5V).	71	XTAO	O	Crystal oscillation circuit output.
35	RF	I	EFM signal input.	72	XVSS		GND for master clock.
36	BIAS	I	Constant current input of the asymmetry circuit.	73	AVSS	—	Analog GND.
37	ASYI	I	Asymmetry comparator voltage input.	74	LOUT2	O	Right-channel LINE output.
38	ASYO	O	EFM full-swing output (low = VSS, high = VDD).	75	AIN2	I	Right-channel operational amplifier input.
39	LRCK	O	D/A interface. LR clock output f = Fs.	76	AOUT2	O	Right-channel analog output.
40	LRCKI	I	LR clock input.	77	AVDD	—	Analog power supply (+5V).
41	PCMD	O	D/A interface. Serial data output (two's complement, MSB first).	78	AVSS	—	Analog GND.
				79	XRST	I	System reset. Reset when low.
42	PCMDI	I	D/A interface. Serial data input (two's complement, MSB first).	80	VDD	—	Power supply (+5V).

Notes)
- PCMD is an MSB first, two's complement output.
- GTOP is used to monitor the frame sync protection status. (High: sync protection window open.)
- XUGF is the frame sync obtained from the EFM signal, and a negative pulse. It is the signal before sync protection.
- XPLCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK and the EFM signal transition point coincide.
- GFS goes high when the frame sync and the insertion protection timing match.
- RFCK is derived with the crystal accuracy. This signal has a cycle of 136µs (during normal speed).
- C2PO represents the data error status.
- XRAOF is generated when the 16K RAM exceeds the ±4F jitter margin.

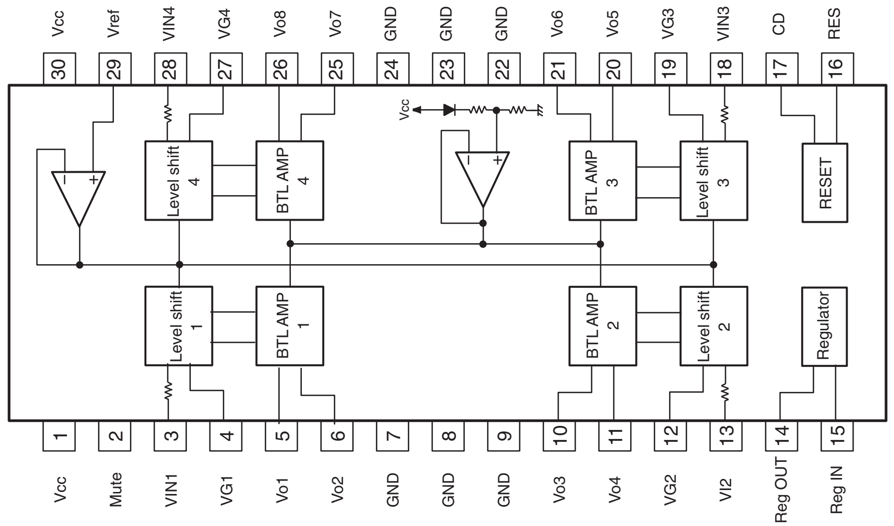
Q401:TC9273N-007 (Analog function switch)



Q402:TC9162AF Analog function switch

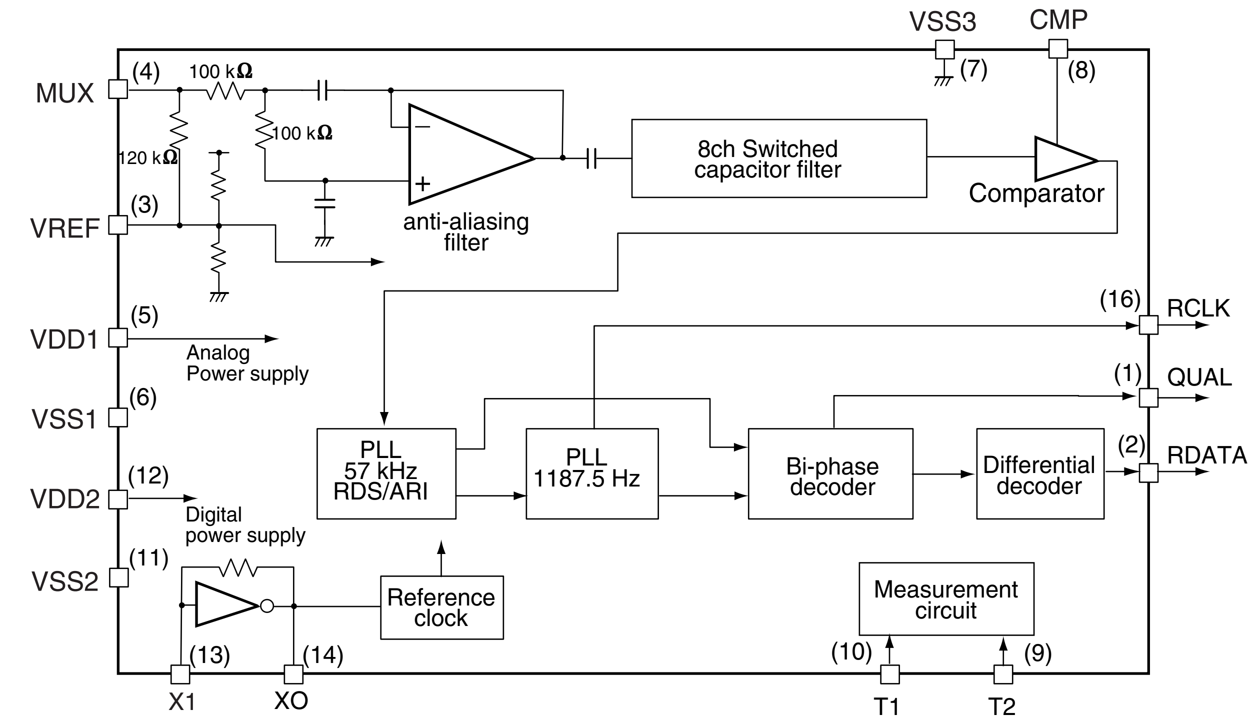


Q102:LA6541D (4-channel ridge Driver for Compact Dizcs)



Pin No.	Pin Name	Description (Function)
1	V_{CC}	Power supply (shorted with pin 30)
2	Mute	ON/OFF control for all BTL AMP outputs
3	$V_{IN}1$	BTL AMP 1 input
4	VG1	BTL AMP 1 input (for gain control)
5	V_O1	BTL AMP 1 output (non-inverting side)
6	V_O2	BTL AMP 1 output (inverting side)
7	GND	GND (minimum electric potential)
8	GND	GND (minimum electric potential)
9	GND	GND (minimum electric potential)
10	V_O3	BTL AMP 2 output (inverting side)
11	V_O4	BTL AMP 2 output (non-inverting side)
12	VG2	BTL AMP 2 input (for gain control)
13	$V_{IN}2$	BTL AMP 2 input
14	REG OUT	Connection for collector of external transistor (PNP); 5 V supply output
15	REG IN	Connection for base of external transistor (PNP)
16	$\overline{RES}$	Reset output
17	C_D	Reset output delay time setting (with capacitor)
18	$V_{IN}3$	BTL AMP 3 input
19	VG3	BTL AMP 3 input (for gain control)
20	V_O5	BTL AMP 3 output (non-inverting side)
21	V_O6	BTL AMP 3 output (inverting side)
22	GND	GND (minimum electric potential)
23	GND	GND (minimum electric potential)
24	GND	GND (minimum electric potential)
25	V_O7	BTL AMP 4 output (inverting side)
26	V_O8	BTL AMP 4 output (non-inverting side)
27	VG4	BTL AMP 4 input (for gain control)
28	$V_{IN}4$	BTL AMP 4 input
29	V_{REF}	Reference voltage input for level shift circuit
30	V_{CC}	Power supply (shorted with pin 1)

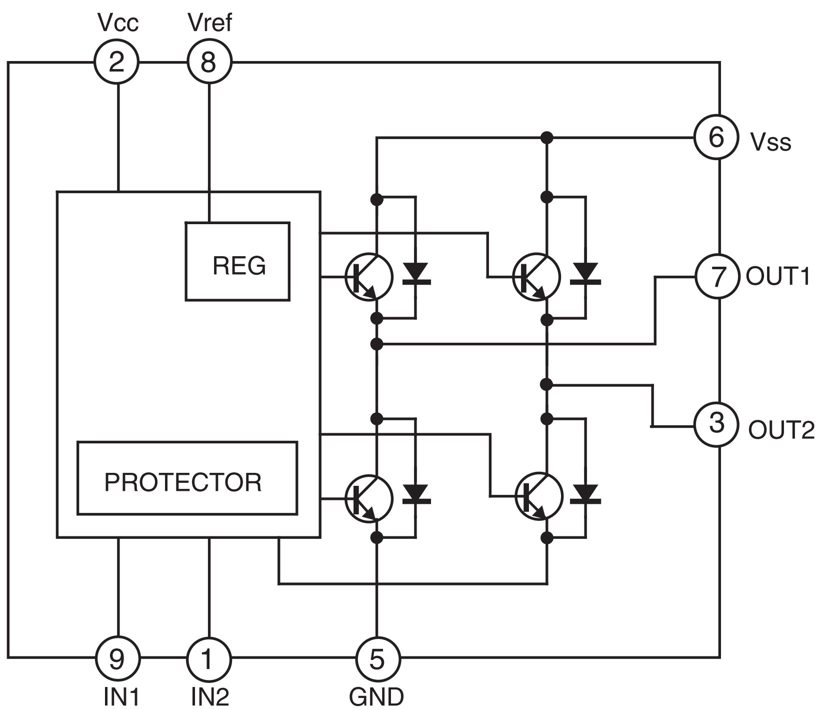
Q180:BU1923 (RDS Decoder(



Pin No.	Symbol	Pin name	Function
1	QUAL	Demodulator quality	Good data : High , bad data : Low
2	RDATA	Demodulator data	Refer to output data trimming
3	Vref	Reference voltage	1/2 VDD1
4	MUX	Input	Composite signal input
5	VDD1	Analog power supply	4.5 V to 5.5 V
6	Vss1		
7	Vss3	GND	-
8	CMP	Comparator input	C-junction
9	T2	Test input	Open or connected to ground
10	T1		
11	VDD2	Digital power supply	4.5 V to 5.5 V
12	Vss2		
13	XI	Crystal oscillor	Connects to 4.332 MHz oscillator
14	XO		
15	(NC)	-	-
16	RCLK	Demodulator clock	1187.5 Hz clock

 CR-305X

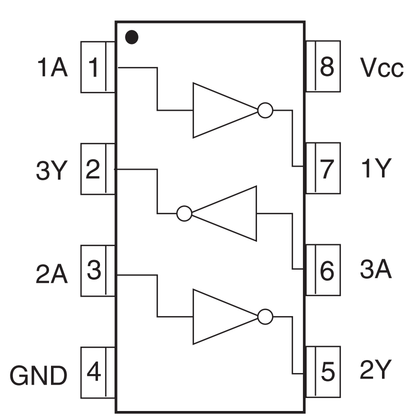
Q103:TA7291S (motor driver)



INPUT		OUTPUT		
IN1	IN2	OUT1	OUT2	MODE
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/SW
1	1	L	L	BRAKE

CCW : Counter clockwise diection
CW : Clockwise diection

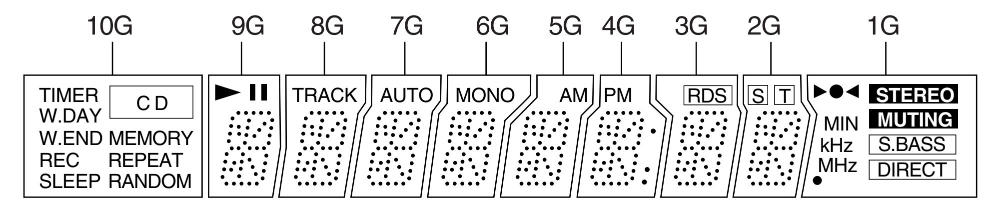
Q691:TC7WU04FU (triple inverters)

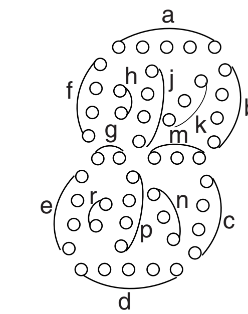


Truth table

A	Y
L	H
H	L

Q751 : 10BT-167GK (FL TUBE)

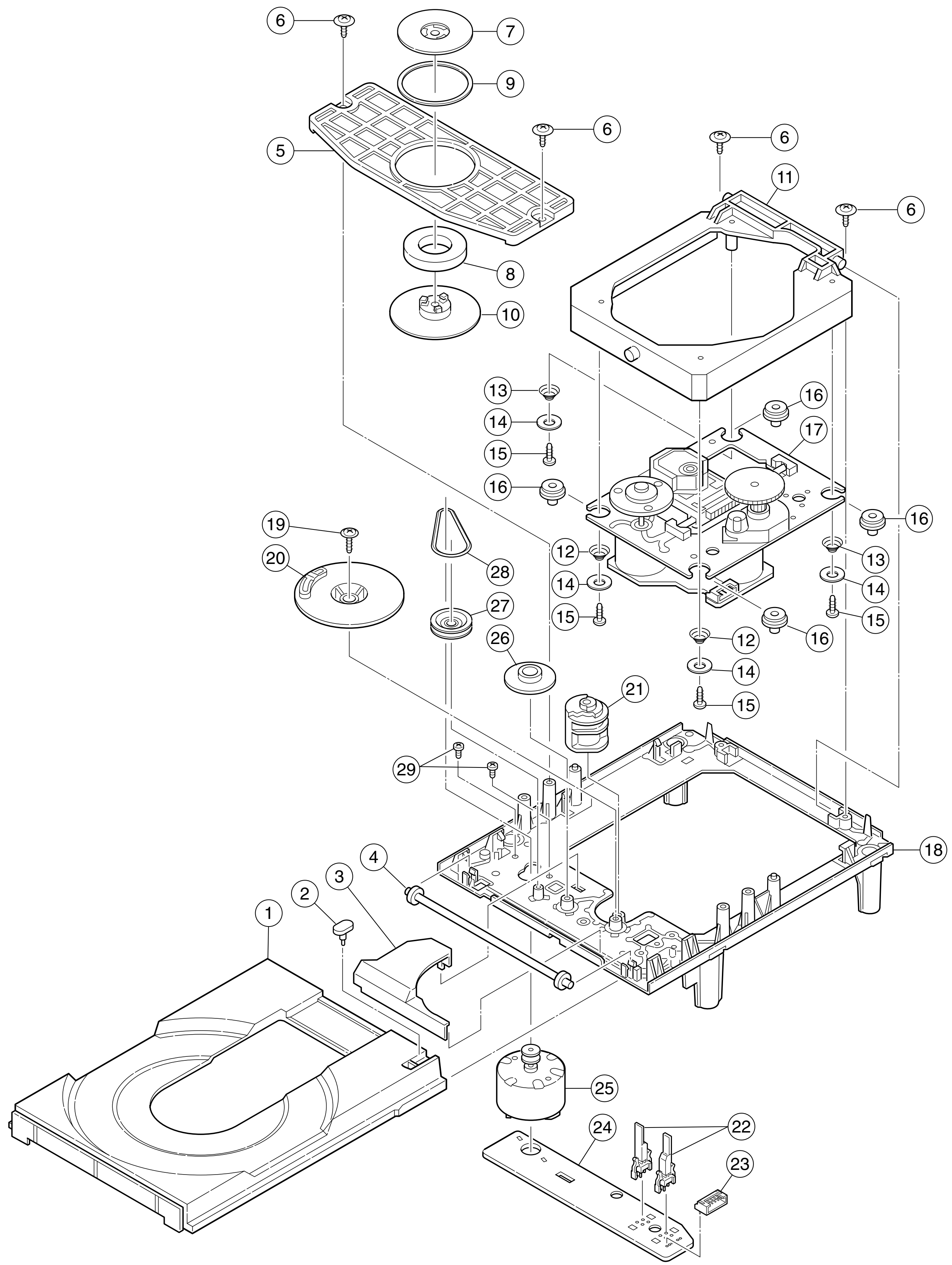




(9G - 2G)

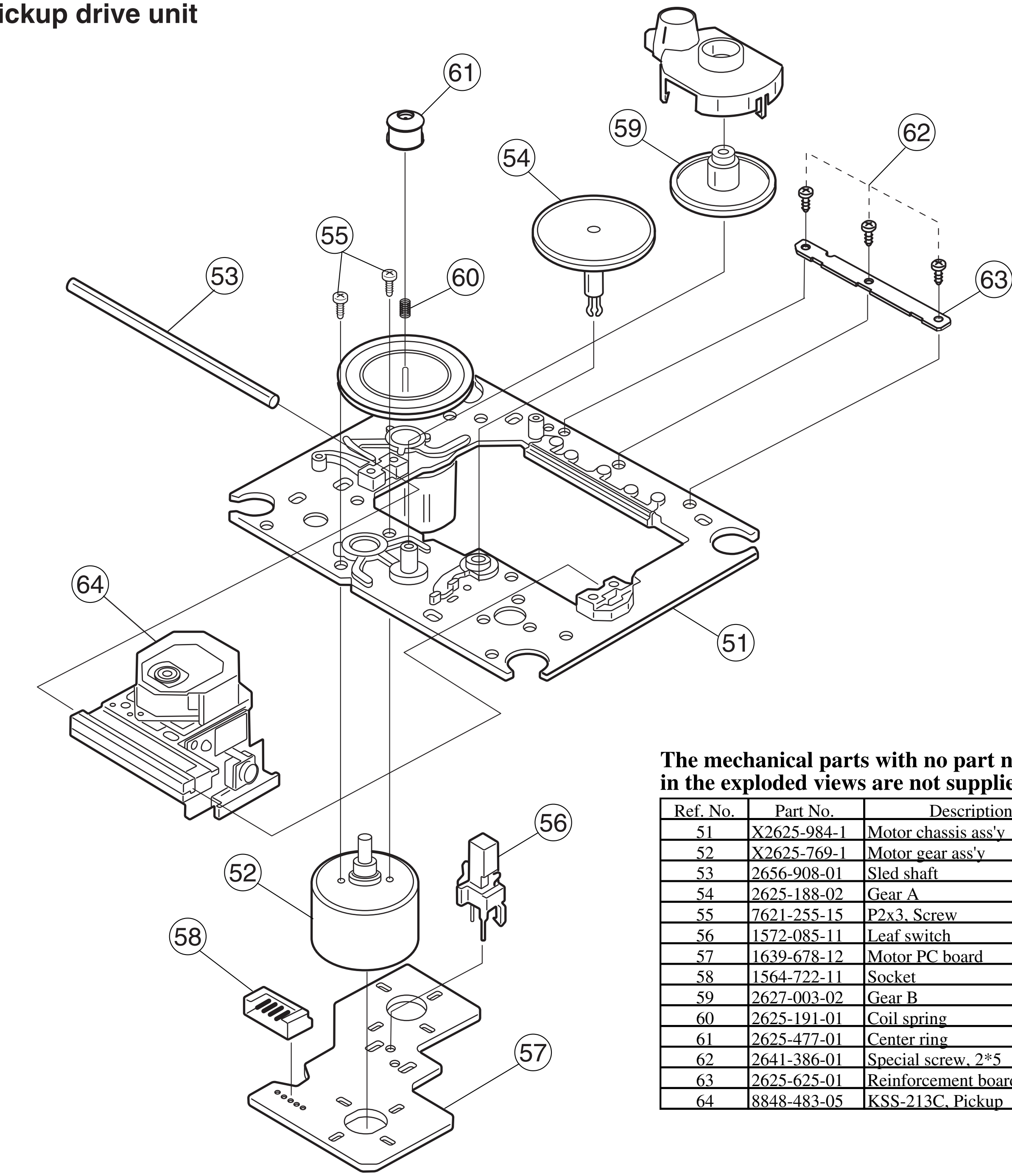
	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	a	a	a	a	a	a	a	a	-
P2	W.DAY	j	j	j	j	j	j	j	j	MUTING
P3	W.END	h	h	h	h	h	h	h	h	MIN
P4	MEMORY	k	k	k	k	k	k	k	k	S.BASS
P5	-	b	b	b	b	b	b	b	b	-
P6	-	f	f	f	f	f	f	f	f	-
P7	-	g	g	g	g	g	g	g	g	-
P8	REC	m	m	m	m	m	m	m	m	MHz
P9	-	c	c	c	c	c	c	c	c	-
P10	-	e	e	e	e	e	e	e	e	-
P11	REPEAT	n	n	n	n	n	n	n	n	kHz
P12	RANDOM	r	r	r	r	rr	r	r	r	DIRECT
P13	-	p	p	p	p	p	p	p	p	-
P14	-	d	d	d	d	d	d	d	d	-
P15	TIMER	▷	TRACK	AUTO	MONO	AM	PM	RDS	S	▷○◁
P16	CD	▯▯	-	-	-	-	Col	-	T	STEREO
P17	SLEEP	-	-	-	-	-	Dp	-	-	○

CD MECHANISM EXPLODEE VIEW(1)



CD MECHANISM EXPLODEE VIEW(2)

pickup drive unit



The mechanical parts with no part number in the exploded views are not supplied.

Ref. No.	Part No.	Description
51	X2625-984-1	Motor chassis ass'y
52	X2625-769-1	Motor gear ass'y
53	2656-908-01	Sled shaft
54	2625-188-02	Gear A
55	7621-255-15	P2x3, Screw
56	1572-085-11	Leaf switch
57	1639-678-12	Motor PC board
58	1564-722-11	Socket
59	2627-003-02	Gear B
60	2625-191-01	Coil spring
61	2625-477-01	Center ring
62	2641-386-01	Special screw, 2*5
63	2625-625-01	Reinforcement board
64	8848-483-05	KSS-213C, Pickup

Ref. No.	Part No.	Description
1	2646-290-01	Tray
2		Stopper
3	2625-544-01	Gear cover
4	2625-535-01	Tray Gear
5	2625-546-01	Chucking plate
6		PTPWH2.6*7,Screw
7	2625-537-01	Chucking yoke
8	1452-493-21	Magnet
9	2625-541-02	Damper
10	2646-291-01	Chucking pulley
11	2646-288-01	Sub chassis
12	2627-236-01	Coil spring (front)
13	2627-235-01	Coil spring (back)
14	2646-289-01	Washer
15		P2.6*10,Screw

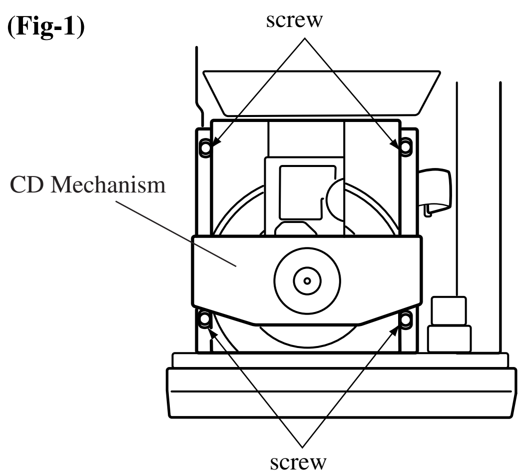
Ref. No.	Part No.	Description
16	2627-234-01	Insulator
17		KSM-213CCM
18	2625-552-06	Main chassis
19	3319-501-51	PTPWH2.6*16, Screw
20	2625-547-01	Drive Gear
21	2625-545-04	Control cam
22	1692-667-11	Leaf switch
23	1564-721-11	Socket
24	1640-523-11	Loading motor ass'y
25	X2625-117-1	Loading motor
26	2625-274-02	Middle gear
27	2625-536-02	Loading pulley
28	3653-387-00	LM belt
29		B2.6*2.5, Screw

REPLACEMENT OF OPIAL PICKUP

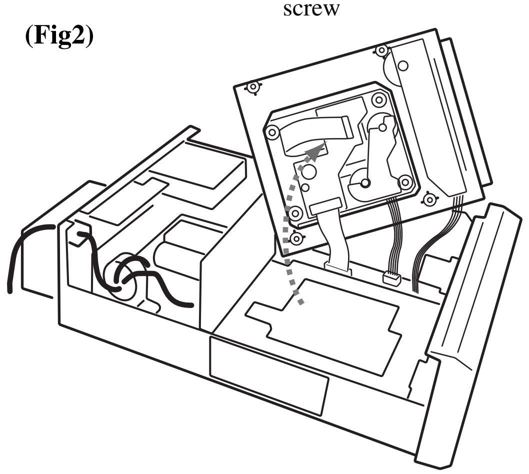
The laser diode in the optical pickup block is so sensitive to static electricity,surge current and etc.
That the components are liable to be broken down or its reliability remarkably deteriorated.
During repair,carefully take the following precautions.
Do not touch the optical pickup object lens with the hands.

(1) The machine screw of four points which is the fixation of mechanism is removed, mechanism is upset, and PC which is about the bottom of mechanism is seen. (Fig-1,Fig-2)

(Fig-1)

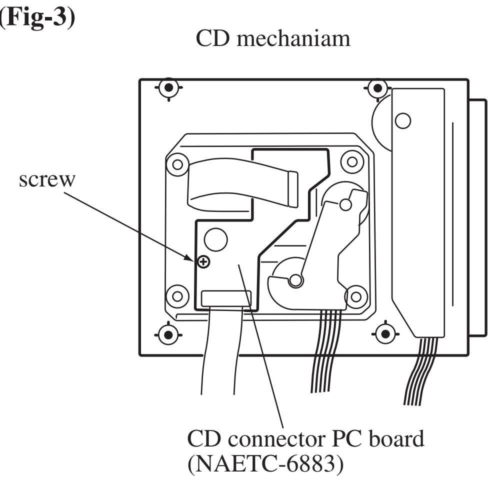


(Fig2)



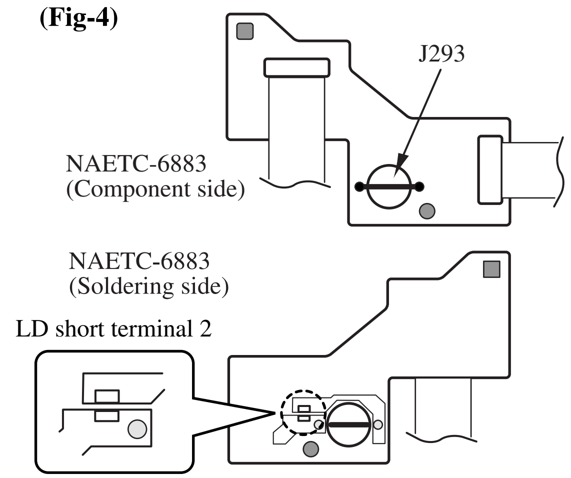
(2) The machine screw is removed and CD connector PC board(NAETC-6883) is removed from the main body of CD mechanism.(Fig-3)

(Fig-3)



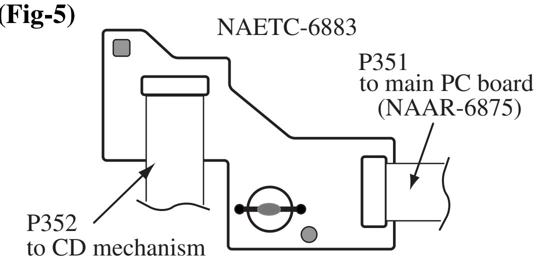
(3) Connect J293 (or LD short terminal 2) on CD Connector PC board (NAETC-6883) first when you replace an optical pickup. (Fig-4)

(Fig-4)



(4) Remove socket P351 between the CD Connector PC board and the Main circuit PC board.(Fig-5)

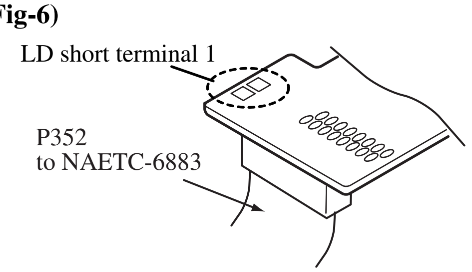
(Fig-5)



(5) Solder the LD short terminal 1 on mechanism (Fig-6)

(6) Disconnect the flexible flat cable P352. (Fig-6)

(Fig-6)



(7) Replace the optical pickup.

(8) Connect the flexible flat cable P352. (Fig-6)

(9) Unsolder the LD terminal 1 on mechanism. (Fig-6)

(10) Connect the socket P351 between CD Connector and Main circuit PC boards (NAAR-6875). (Fig-5)

(11) Cut J293.(or Unsolder the LD terminal 2) (Fig-4)

CHASSIS EXPLODED VIEW PARTS LIST

REF.NO.	PART NO.		DESCRIPTION
1	27111168		Front brakcet
6	838130088		3TTB+8B, Self tapping screw
7	27100384		Chassis
8	27190693A		KGLS-6RF, Holder
9	27191112		KGPS-6RF, Holder
10	27191110		Hoder, M
12	27175253-1A		Leg
14	27300750	⚠	Busing, cord
15	830440069		4TTC+6C(BC), Self tapping screw
16	831430088		3TTW+8B(BC), Self tapping screw
20	28184781		Cover, HT
22	28184782		Top cover
23	838930088		3TTB+8B(UN), Self tapping screw
24	28325775A		Knob, volume
25	28148447		Tray panel, CD
26	27150456		Shield plate
31	27122738		Rear panel<D>
	27122739		Rear panel<P, GR, DT, GT>
33	838430068		3TTB+6B(BC), Self tapping screw
41	27212217		Front panel<D, GR, DT, GT>
	27212218		Front panel<P>
43	27268027A		Guide, volume
46	28198909		Facet
47	28191888		Clear plate
50	880009		Plastic rivet, NRP-345<P, GR, GT>
52	29362650		Label, Spec.<D>
	29362700		Label, Spec.<GR>
	29362651		Label, Spec.<DT>
	29362699		Label, Spec.<GT>
	29362652		Label, Spec.<P>
53	29362572A		Label, Warning <D>
	29362571		Label, Warning<P, GR, GT, DT>
54	29360687		Label<GR, GT, P>
55	29362285		Label
F901	252157	⚠	1.25A-UL/T-237, Fuse<D, DT>
	252083	⚠	0.4A-SE-EAW, Fuse<P,GR, GT>
P302	2009990500		NSAS-10P0654, Socket
P303	20022391210		NSAS-12P0723, Socket
P351	2047161012		NCFC7-161012, Flexible flat cable
P352	2042161022		NCFC2-161022, Flexible flat cable
P701	2047360612		NCFC7-360612, Flexible flat cable
P778	2047151012		NCFC7-151012F,lexible flat cable
P901	253294HDK	⚠	AS-UC-2#18, Power supply cord<D, DT>
	253287HIT	⚠	AS-CCEE, Power supply cord<GR>
	253237HIT	⚠	AS-CEE, Power supply cord<P, GT>
Q557,Q558	2203384 or	*	2SC3851-Y or
	2203383	*	2SC3851-O, Transistor
Q559,Q560	2203394 or	*	2SA1488-Y or
	2203393	*	2SA1488-O, Transistor
Q557A	27160468		Heat sink
Q557B	801433		3SMS8W.SW+14B(BC), Special screw
T901	2301452	⚠	NPT-1391D, Power transformer<D, DT>
	2301454	⚠	NPT-1391G, Power transformer<GR, GT>
	2301453	⚠	NPT-1391P, Power transformer<P>
Z1	24800018A		NCD-170S, CD mechanism
Z2	24840133		Boss, PCB
Z3	24840135		Boss, PCB3
Z5	838120080		2TTB+8P, Self tapping screw
Z6	838426088		2.6TTB+8B(BC), Self tapping screw

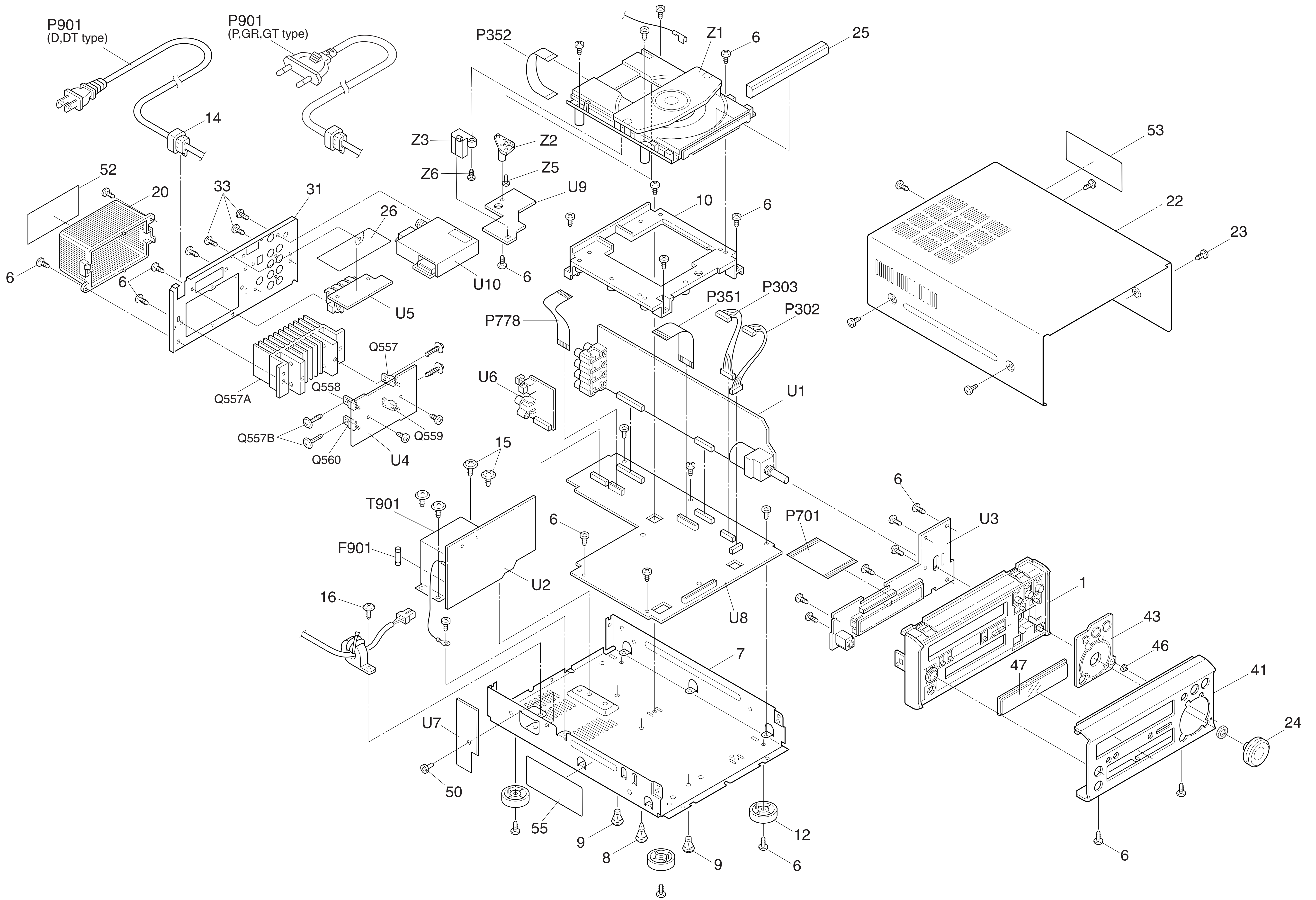
REF.NO.	PART NO.	DESCRIPTION
U1	H445574-1A	NAAF-6874-1A, Selector circuit PC board ass'y <D>
	1H445574-1B	NAAF-6874-1B, Selector circuit PC board ass'y <P>
	1H445574-1C	NAAF-6874-1C, Selector circuit PC board ass'y <DT>
	1H445574-1D	NAAF-6874-1D, Selector circuit PC board ass'y <GR, GT>
U2	1H445578-1A	NAPS-6878-1A, Power supply PC board ass'y <D>
	1H445578-1B	NAPS-6878-1B, Power supply PC board ass'y<P>
	1H445578-1C	NAPS-6878-1C, Power supply PC board ass'y <DT>
	1H445578-1D	NAPS-6878-1D, Power supply PC board ass'y<GR, GT>
U3	1H445579-1A	NADIS-6879-1A, Display circuit PC board ass'y <D>
	1H445579-1B	NADIS-6879-1B, Display circuit PC board ass'y<P>
	1H445579-1C	NADIS-6879-1C, Display circuit PC board ass'y <DT>
	1H445579-1D	NADIS-6879-1D, Display circuit PC board ass'y<GR, GT>
U4	1H445580-1A	NAAF-6880-1A, Power amplifier PC board ass'y <D>
	1H445580-1B	NAAF-6880-1B, Power amplifier PC board ass'y<P>
	1H445580-1C	NAAF-6880-1C, Power amplifier PC board ass'y <DT>
	1H445580-1D	NAAF-6880-1D, Power amplifier PC board ass'y<GR, GT>
U5	1H445581-1A	NAETC-6881-1A, Speaker terminal PC board ass'y <D>
	1H445581-1B	NAETC-6881-1B, Speaker terminal PC board ass'y<P>
	1H445581-1C	NAETC-6881-1C, Speaker terminal PC board ass'y <DT>
	1H445581-1D	NAETC-6881-1D, Speaker terminal PC board ass'y<GR, GT>
U6	1H445582-1A	NAETC-6882-1A, Digital output PC board ass'y <D>
	1H445582-1B	NAETC-6882-1B, Digital output PC board ass'y<P>
	1H445582-1C	NAETC-6882-1C, Digital output PC board ass'y <DT>
	1H445582-1D	NAETC-6882-1D, Digital output PC board ass'y<GR, GT>
U7	25136900	NCETC-6900, PC board for holder <P, GR, GT>
U8	1H445575-1A	NAAR-6875-1A, CD circuit PC board ass'y<D>
	1H445575-1B	NAAR-6875-1B, CD circuit PC board ass'y<P>
	1H445575-1C	NAAR-6875-1C, CD circuit PC board ass'y<DT>
	1H445575-1D	NAAR-6875-1D, CD circuit PC board ass'y<GR, GT>
U9	1H445583-1A	NAETC-6883-1A, Connector PC board ass'y<D>
	1H445583-1B	NAETC-6883-1B, Connector PC board ass'y<P>
	1H445583-1C	NAETC-6883-1C, Connector PC board ass'y<DT>
	1H445583-1D	NAETC-6883-1D, Connector PC board ass'y<GR, GT>
U10	240134	TFCE1U114A, Tuner unit<D>
	240135	TFCE1E512A, Tuner unit<GR, GT, P DT>

NOTE : THE COMPONENTS IDENTIFIED BY THE MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

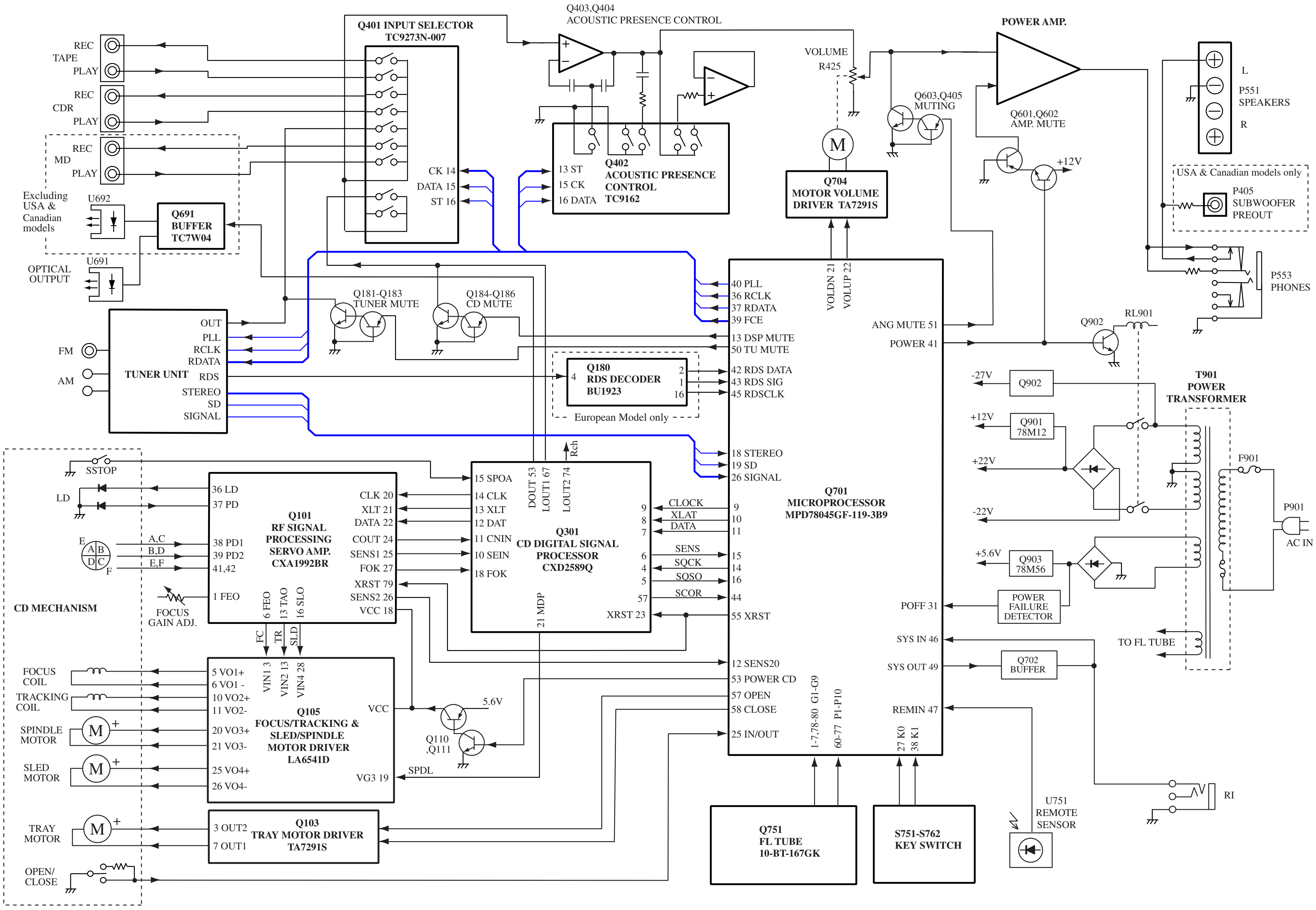
<D> : USA & Canadian models only
<DT> : Taiwanese model only
<P> : European model only
<GR> : Chinese model only
<GT> : Asian model only

CAUTION : Replacement of the transistor of mark * ,if necessary, must be made from the same beta group(HFE) as the original type.

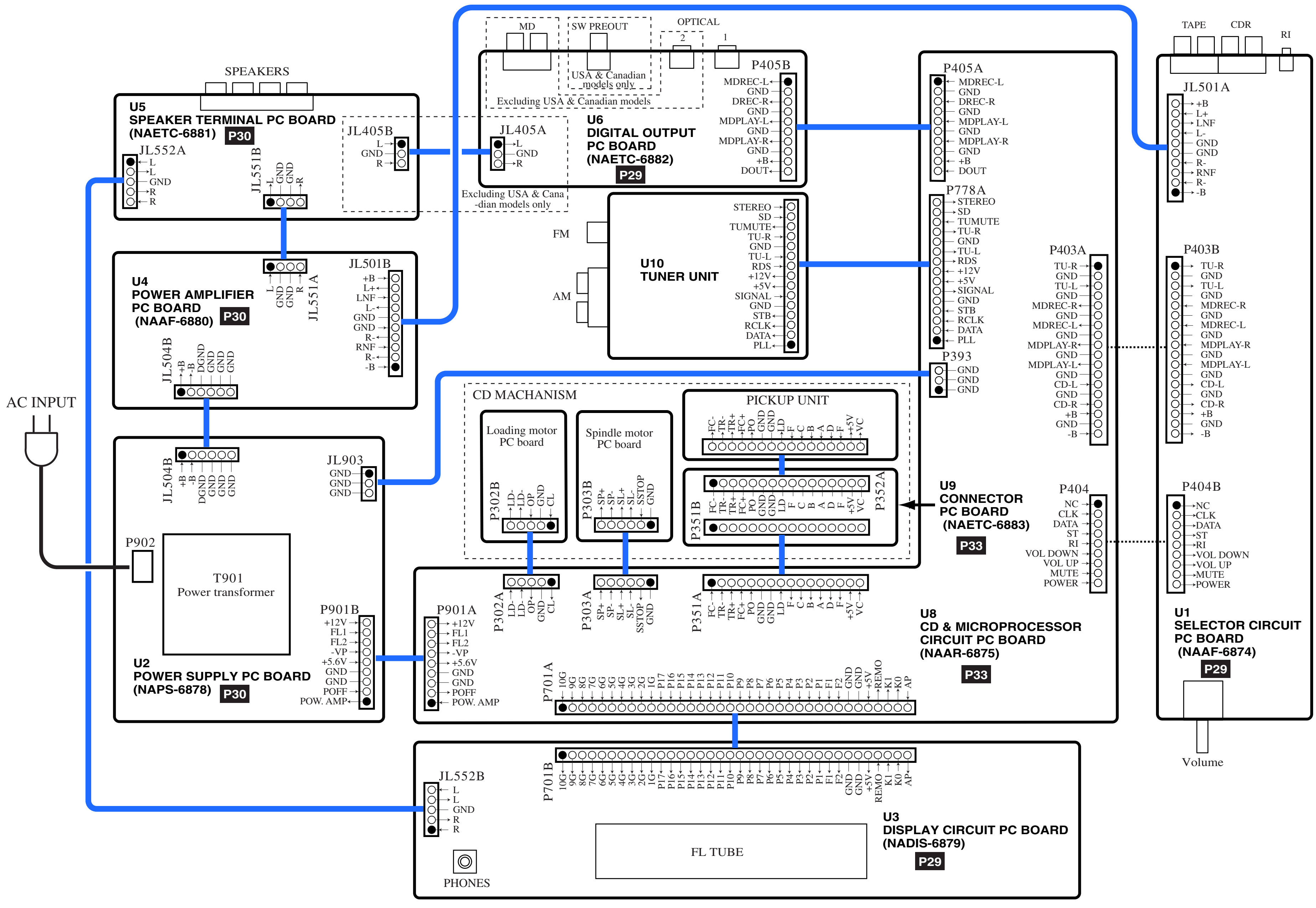
CHASSIS EXPLODED VIEW



BLOCK DIAGRAM



WIRING VIEW



PRINTED CIRCUIT BOARD VIEW PARTS LIST

SELECTOR CIRCUIT PC BOARD (NAAF-6874-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q401	22241072	TC9273N-007
Q402	22240981R2	TC9162AF
Q403,Q404	22241383R2	NJM4565M-D
	Transistors	
Q405, Q406	2215410R2	RN1441
Q409, Q603	2214470R2	RN1402
Q501-Q504	2216156R2	2SC1622A-L
Q505-Q508	2213143R2	2SC2712-O
Q509-Q512	2211455 or	2SA1015-GR or
	2215975	KTA1266-GR
Q515-Q518	2211455 or	2SA1015-GR or
	2215975	KTA1266-GR
Q601	2213143R2	2SC2712-O
Q602	2214375R2	2SA1162-GR
	Diodes	
D491,D492	224491300R2	UDZ13B
D501-D504	223234R2	1SS352
D601	223234R2	1SS352
	Capacitors	
C409,C410	354742209	22 µF, 16 V, Elect.
C415-C418	371126834	0.068 µF, ±5 %, 50 V, Plastic
C421,C422	371121534	0.015 µF, ±5 %, 50 V, Plastic
C423,C424,C603	354780109	1 µF, 50 V, Elect.
C425,C426	371121544	0.15 µF, ±5 %, 50 V, Plastic
C429,C430	354742209	22 µF, 16 V, Elect.
C491,C492	354742219	220 µF, 16 V, Elect.
C493,C494	354741019	100 µF, 16 V, Elect.
C495,C496	354761019	100 µF, 35 V, Elect.
C501,C502	354741009	10 µF, 16 V, Elect.
C505,C506,C601	354744709	47 µF, 16 V, Elect.
C509-C510	354722219	220 µF, 6.3 V, Elect.
C515,C516	354741009	10 µF, 16 V, Elect.
	Resistors	
R427	5104333	N16RG100KBT25F, Volume
R491,R492	443625614	560 Ω±5 %, 1 W, Metal oxide
R493,R494	443522204	22 Ω±5 %, 1/2 W, Metal oxide
R495	443521024	1k Ω±5 %, 1/2 W, Metal oxide
R496	443528214	820 Ω±5 %, 1/2 W, Metal oxide
R519-R522	443523904	39 Ω±5 %, 1/2 W, Metal oxide
R533,R534	443523304	33 Ω±5 %, 1/2 W, Metal oxide
R535,R536	443523904	39 Ω±5 %, 1/2 W, Metal oxide
	Jacks	
P400, P401	25045575	NPJ-4PDRW389
P402	25045581R0	HSJ1501-010010, RI Jack
	Sockets	
P403B	25051529	NSCT-18P1316
P404B	25051234	NSCT-9P1024
	Plug	
JL501A	25055631	NPLG-10P593

POWER SUPPLY PC BOARD (NAPS-6878-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q901	222780125	78M12HF
Q903	222780565	78M56
	Transistors	
Q902	2211503 or	2SA950-O or
	2211504	2SA950-Y
Q904	2213640	DTC123JS
	Diodes	
D901	22380022F or	RBV402 or
	22380271F	D3SBA20
D902-D908	22380260 or	RL1N4003 or
	22380035	GP104003E
D909	224492700R2	UDZ27B
D910	224490510R2	UDZ5.1B
D911	223234R2	1SS352
	Capacitors	
C904,C905	354763329S	3300 µF,35 V, Elect.
C907	354741009	10 µF, 16 V, Elect.
C909	354761019	100 µF, 35 V, Elect.
C913	354764709	47 µF, 35 V, Elect.
C914	3500173S	6800 µF, 16 V, Elect.
C918	354781019	100 µF, 50 V, Elect.
C920-C924	374722244	0.22 µF±5 %, 50 V, Plastic
	Resistors	
R901	443622204	22 Ω±5 %, 1 W, Metal oxide
R903,R913	453530224	2.2 Ω±5 %, 1/2 W, Metal oxide
R907	453534794	0.47 Ω±5 %, 1/2 W, Metal oxide
R908	443521024	1 k Ω±5 %, 1/2 W, Metal oxide
R911	443522704	27 Ω± 5%, 1/2 W, Metal oxide
R912 ⚠	431533355	3.3 MΩ±20 %,1/2 W,Solid <D,DT>
	Relay	
RL901	25065607	NRL-2P5A-DC12-155 <D,DT>
	25065598 or	NRL-2P3A-DC12-148 or
	25065597	NRL-2P8A-DC12-147 <P,GR,GT,PT>
	Plug	
JL903B	25055624	NPLG-3P586
P901B	25055153	NPLG-9P137
P902 ⚠	25055676	NPLG-2P632
	Socket	
JL504B	25050270	NSCT-6P98
	Fuse holder	
F901A,F901B ⚠	25050065	YSH403T
	Fuse label	
F901A	29361919	T400MAL250V, Fuse label <P,GR,GT,PT>
	Clamp	
P901C	27190608-1	UA-0 V0
	Heat sink	
Q903A	27160250	RAD-81
Q903B	82143010	3P+10FN(BC)

DISPLAY CIRCUI PC BOARD (NADIS-6879-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL Tube	
Q751	212141	10BT-167GK
	Remote sensor	
U751	241330	PIC-26043TE2
	Transistor	
Q782	2214490R2	RN1404
	LED	
D782	225381	SEL2210R-TP1
	Capacitor	
C752	353721019	100 µF, 6.3 V, Elect.
	Resistors	
R567,R568	443523314	330 Ω±5 %, 1/2 W, Metal oxide
	Jack	
P553	25045396	LGT1516-0101, Head phone jack
	Sockets	
JL552B	25051089	NSCT-5P876
P701B	25052232	NSCT-36P2129
	Push switches	
S751- S762	25035699	NPS-111-S662
	FL Holder	
Q751A	27191111	FL Holder

POWER AMPLIFIER PC BOARD (NAAF-6880-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q551,Q552	2213284 or	2SC1740S-R or
	2215864	KTC3199-GR
Q553,Q554	2211653 or	2SC2235-O or
	2211654	2SC2235-Y
Q555-Q556	2211643 or	2SA965-O or
	2211644	2SA965-Y
	Capacitors	
C551,C552	355741009	10 µF, 16 V, Elect.
C553,C554	371124734	0.047 µ±5 %, 50 V, Plastic
	Resistors	
R557,R558	443521014	100 Ω±5 %, 1/2 W, Metal oxide
R559-R562	452732294F	0.22 Ω±5 %, 2 W, Metal oxide
R563,R564	453530824	8.2 Ω±5 %, 1/2 W, Metal oxide
	Sockets	
JL501B	25051094	NSCT-10P881
JL504A	25051110	NSCT-6P897
JL551A	25051088	NSCT-4P875

SPEAKER TERMINAL PC BOARD (NAETC-6881-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Coils	
L551,L552	231176S	S-1.3C
	Resistors	
R565,R566	453530564	5.6 Ω± 5%, 1/2 W, Metal oxide
	Sockets	
JL405A	25051087	NSCT-3P874<D>
JL551B	25051088	NSCT-4P875
JL552A	25055626	NPLG-5P588
	Terminal	
P551	25060299	NTM-4PDML230, Speaker

DIGITAL OUTPUT TERMINAL PC BOARD (NAETC-6882-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo couplers	
U691	24120082	GP1FA550TZ
U692	24120082	GP1FA550TZ<P,DT,GR,GT,PT>
	IC	
Q691	22240935R2	TC7WU04FU<P,DT,GR,GT,PT>
	Coil	
L691	231237K220R2	NCH-1477
	Capacitor	
C691	354741019	100 µF, 16 V, Elect.
	Plug	
JL405B	25055624	NPLG-3P586<D>
	Socket	
P405B	25051235	NSCT-10P1025
	Jack	
P406	25045567	NPJ-1PDBL382<D>
	25045575	NPJ-4PDRW389<P,DT,GR,GT,PT>

CD CIRCUIT PC BOARD (NAAR-6875-1A/-1B/-1C/-1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101	22241499R3	CXA1992BR
Q102	22241247	LA6541D
Q103	22240239	TA7291S
Q180	22241302	BU1923 <P>
Q301	22241500R3	CXD2589Q
Q701	22241502R3	MPD78045FGF-119-3B9
Q704	22240239	TA7291S
	Transistors	
Q110,Q112	2212853	2SB1068-K
Q111,Q703	2214490R2	RN1404
Q114	2211504	2SA950-Y
Q181,Q184	2214550R2	RN2404
Q182,Q183	2215410R2	RN1441
Q185,Q186	2215410R2	RN1441
Q191	2213143R2	2SC2712-O <P>
Q702	2214540R2	RN2403
	Diodes	
D101,D703,D707	223234R2	1SS352
D701,D702,D704	22380284R2	1SR154-400
D705	224490560R2	UDZ5.6B, Zener
D791	224490510R2	UDZ5.1B, Zener
	Coils	
L101,L351	231237K100R2	NCH-1475
	Crystals	
X181	3010321	HC-49/U034.332 MHz <P>
X351	3010308	HC-49/U0316.9344M
X701	3010261	HC-49/U03 4.19M10P
	Capacitors	
C102,C129,C135	355721019	100 µF, 6.3 V, Elect.
C104,C105,C115	374721034	0.01 µF, ±5 %, 50 V, Plastic
C106,C109	374724744	0.47 µF, ±5 %, 50 V, Plastic
C107,C124,C133	374722224	2200 pF, ±5 %, 50 V, Plastic
C108	374721024	1000 pF, ±5 %, 50 V, Plastic
C110,C111,C113	374721044	0.1 µF, ±5 %, 50 V, Plastic
C112	355780479	4.7 µF, 50 V, Elect.
C117,C794,C795	355763309	33 µF, 35 V, Elect.
C118,C191,C192	355780339	3.3 µF, 50 V, Elect.
C120	374723334	0.033 µF, ±5 %, 50 V, Plastic
C121,C123	374721034	0.01 µF, ±5%, 50V, Plastic
C125,C128 ,C352	374721034	0.01 µF, ±5 %, 50 V, Plastic
C134	354724719	470 µF, 6.3 V, Elect.
C136,C145,C151	355721019	100 µF, 6.3 V, Elect.
C137	374722234	0.022 µF, ±5 %, 50 V, Plastic
C139,C181,C708	355780229	2.2 µF, 50 V, Elect.
C180,C350,C712	355721019	100 µF, 6.3 V, Elect.
C185	355780229	2.2 µF, 50 V, Elect. <P>
C333,C334	374726814	680 pF, ±5 %, 50 V, Plastic
C335,C336	355762209	22 µF, 35 V, Elect.
C351	355784799	0.47 µF, 50 V, Elect.
C354	374724734	0.047 µF, ±5%, 50 V, Plastic
C355	374721524	1500 pF, ±5 %, 50 V, Plastic
C703	3060010	NTC-20P09, Trimming capacitor (Clock adj.)
C710	354721019	100 µF, 6.3 V, Elect.
C711	3000078	DX-5R5L104, Super capacitor
	Resistor	
R123	5210263	N06HR20KBC, Trimming register
	Sockets	
JL903A	25051087	NSCT-3P874
P351A	25052212	NSCT-16P2109
P701A	25052232	NSCT-36P2129
P778	25052211	NSCT-15P2108
P901A	2002391815	NSAS-18P0666
	Plugs	
P104	25055045	NPLG-4P33
P105	25055038	NPLG-2P29
P302A	25055149	NPLG-5P133
P303A	25055150	NPLG-6P134
P403A	25055807	NPLG-18P763
P404A	25055705	NPLG-9P661
P405A	25055706	NPLG-10P662
	Terminal	
TP01	25060061	Terminal PC (clock /adjust)

CONNECTOR PC BOARD (NAETC-6883-1A/-1B/-1C/-1D)

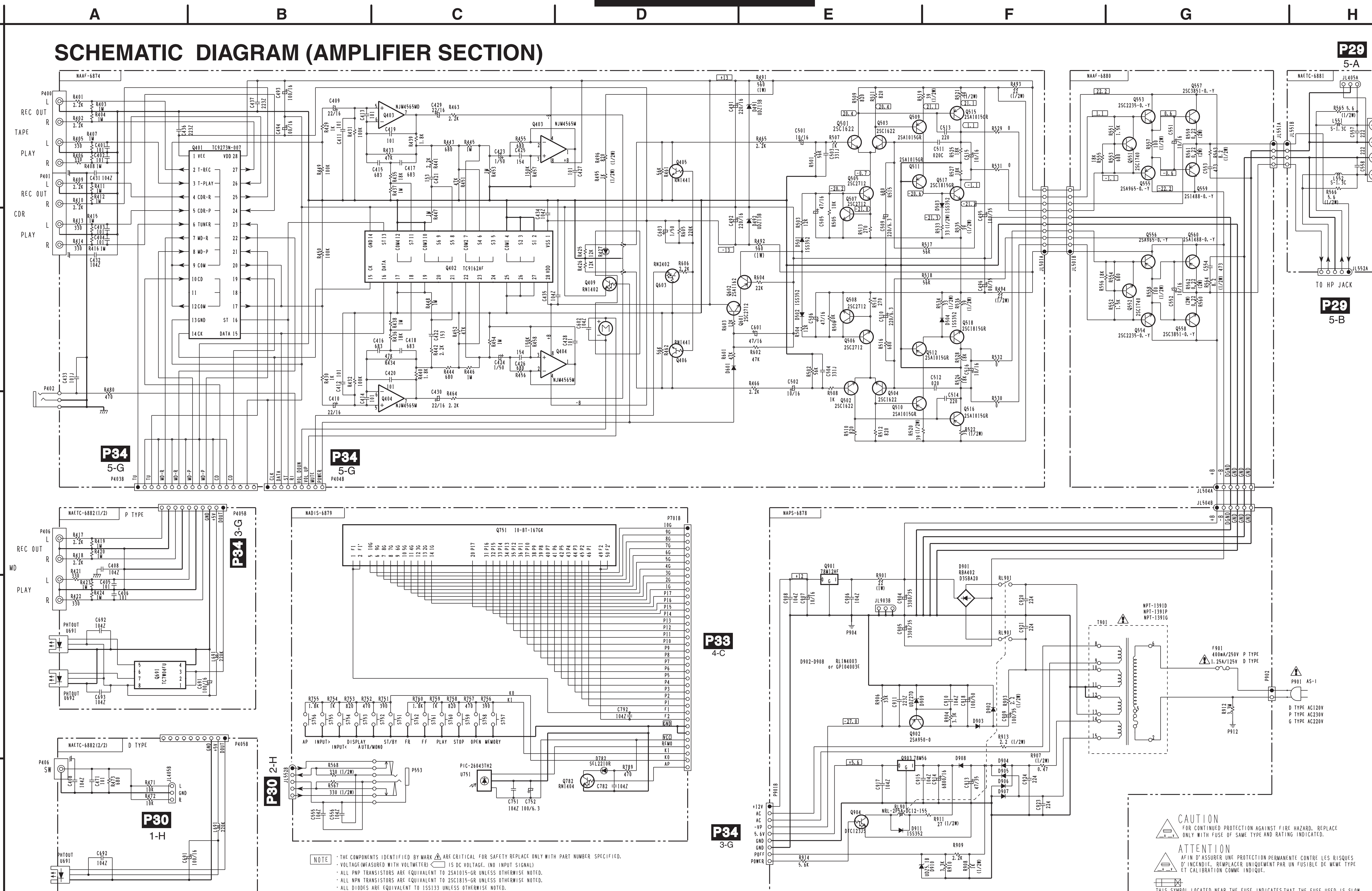
CIRCUIT NO.	PART NO.	DESCRIPTION
	Sockets	
P351B	25052249	NSCT-16P2146
P352A	25051796A	NSCT-16P1583

THE COMPONENTS IDENTIFIED BY THE MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

<D> : USA & Canadian models only
<DT> : Taiwanese model only
<P> : European model only
<GR> : Chinese model only
<GT> : Asian model only

CAUTION : Replacement of the transistor of mark ＊,if necessary, must be made from the same beta group(HFE) as the original type.

SCHEMATIC DIAGRAM (AMPLIFIER SECTION)



NOTE
- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE(MEASURED WITH VOLTMETER) ⬭ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ( ) ARE IN uF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
  EX) 030→3pF 330→33pF 331→330pF 333→0.033uF
- ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
  EX) ⚬⚬⚬ ← PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

ATTENTION
AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

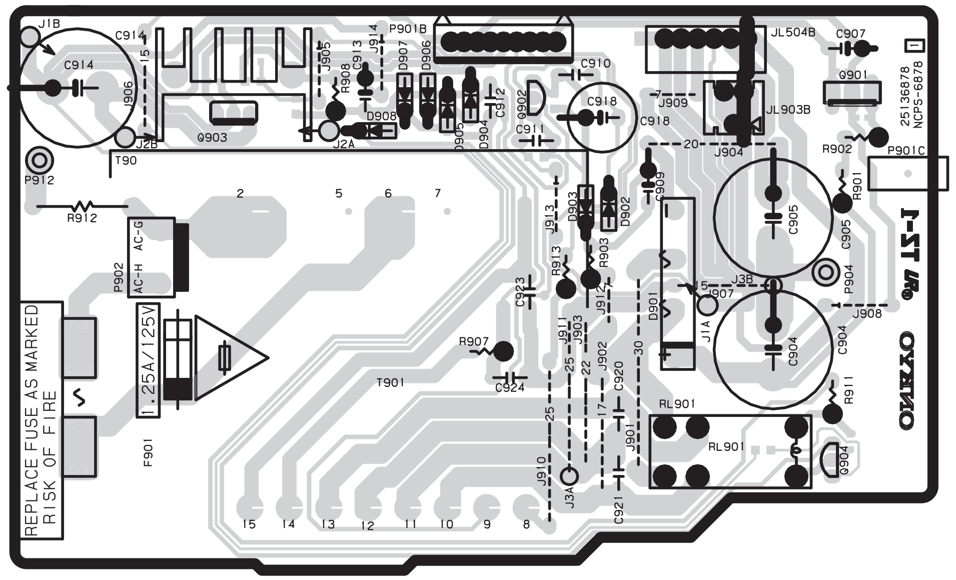
THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MARKING ADJACENT TO THE SYMBOL.

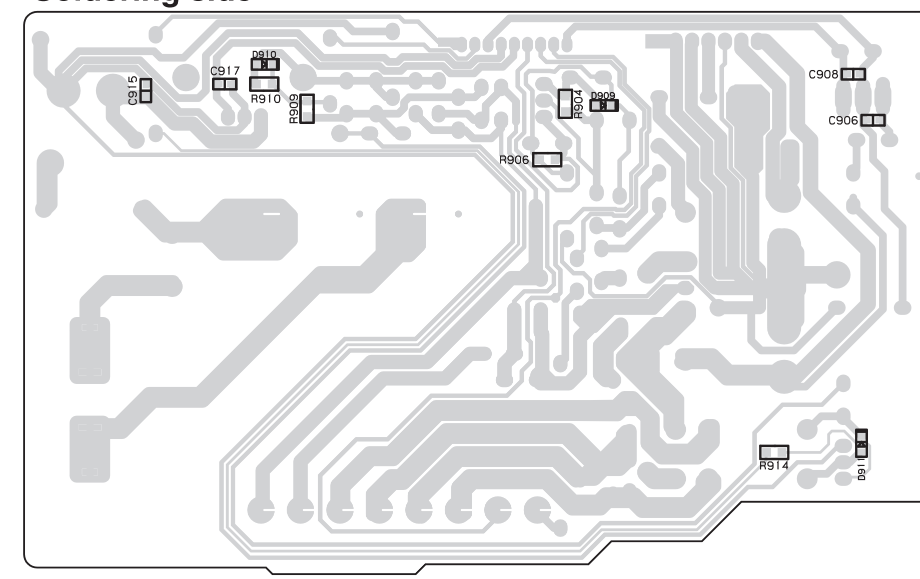
CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST E LENT. POUR UNE PROTECTION PERMANENTE, N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.

PRINTED CIRCUIT BOARD VIEW 1

U2 POWER SUPPLY PC BOARD (NAPS-6878)

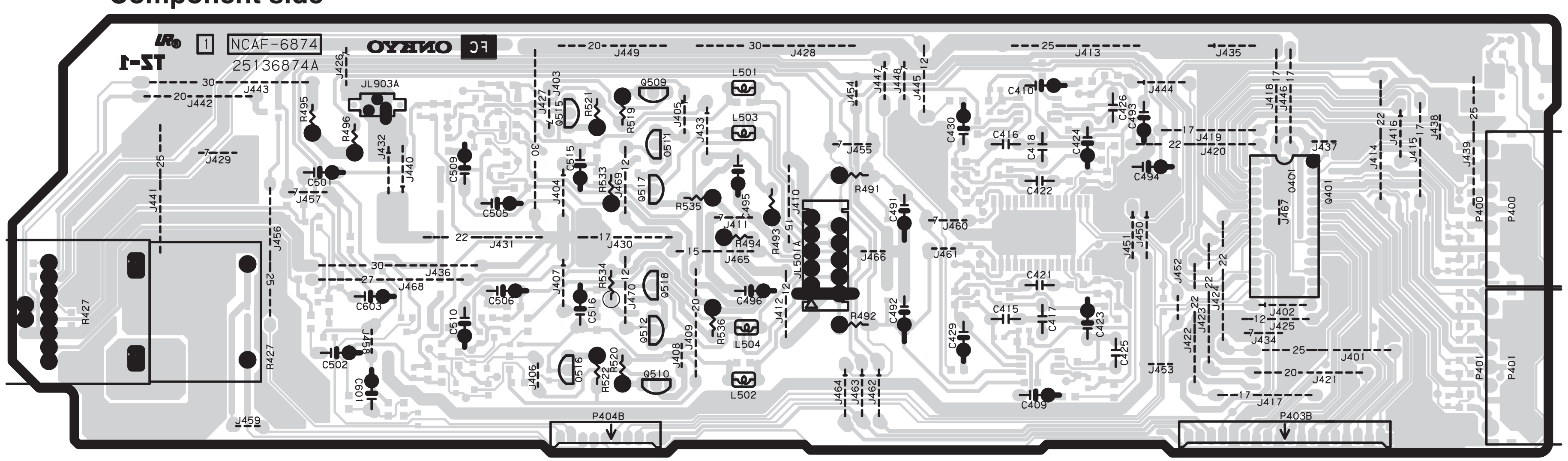
Component side



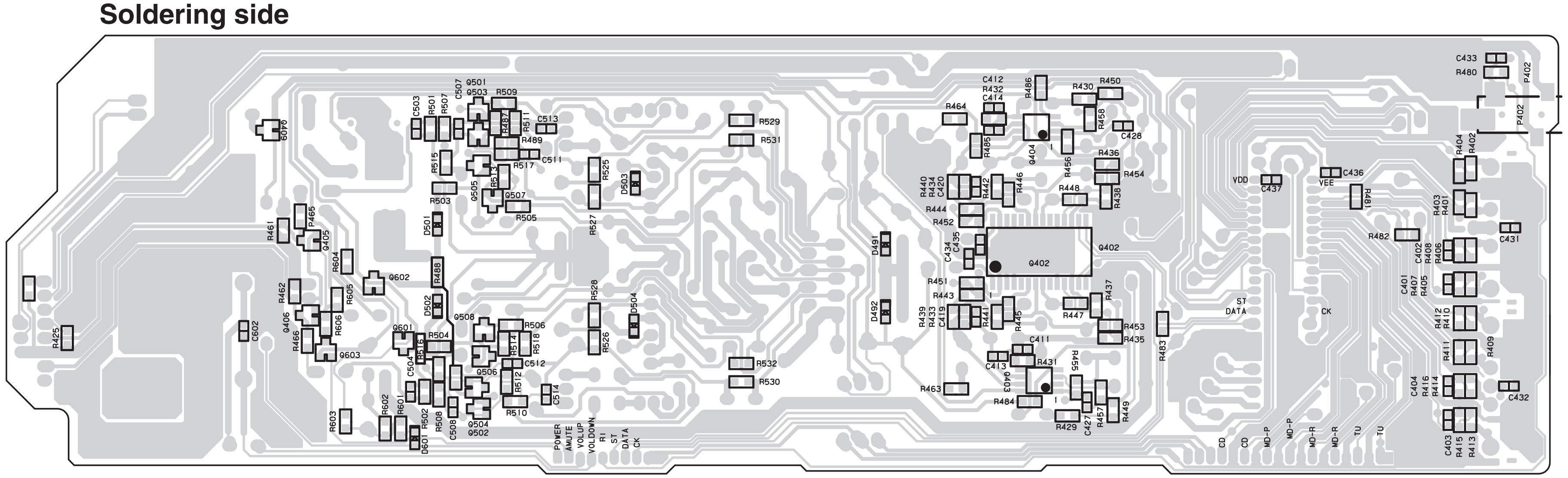

Soldering side

U1 SELECTOR CIRCUIT PC BOARD (NAAF-6874)

Component side

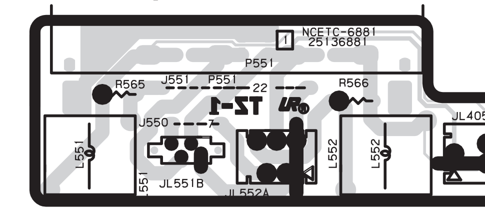


Soldering side

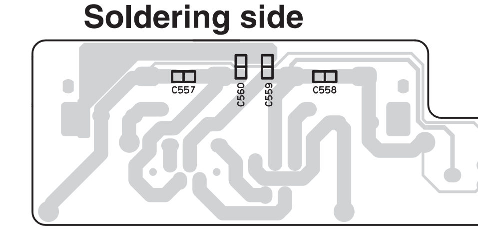


U5 SPEAKER TERMINAL PC BOARD (NAETC-6881)

Component side

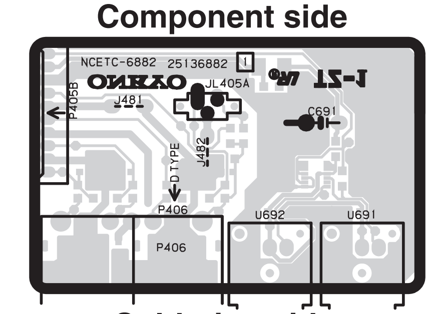


Soldering side

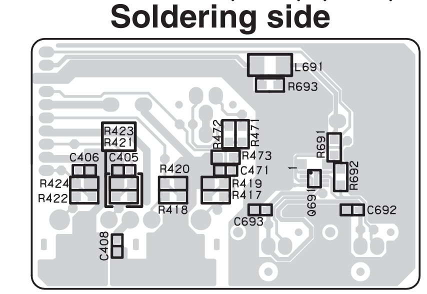


U6 DIGITAL OUTPUT PC BOARD (NAETC6882)

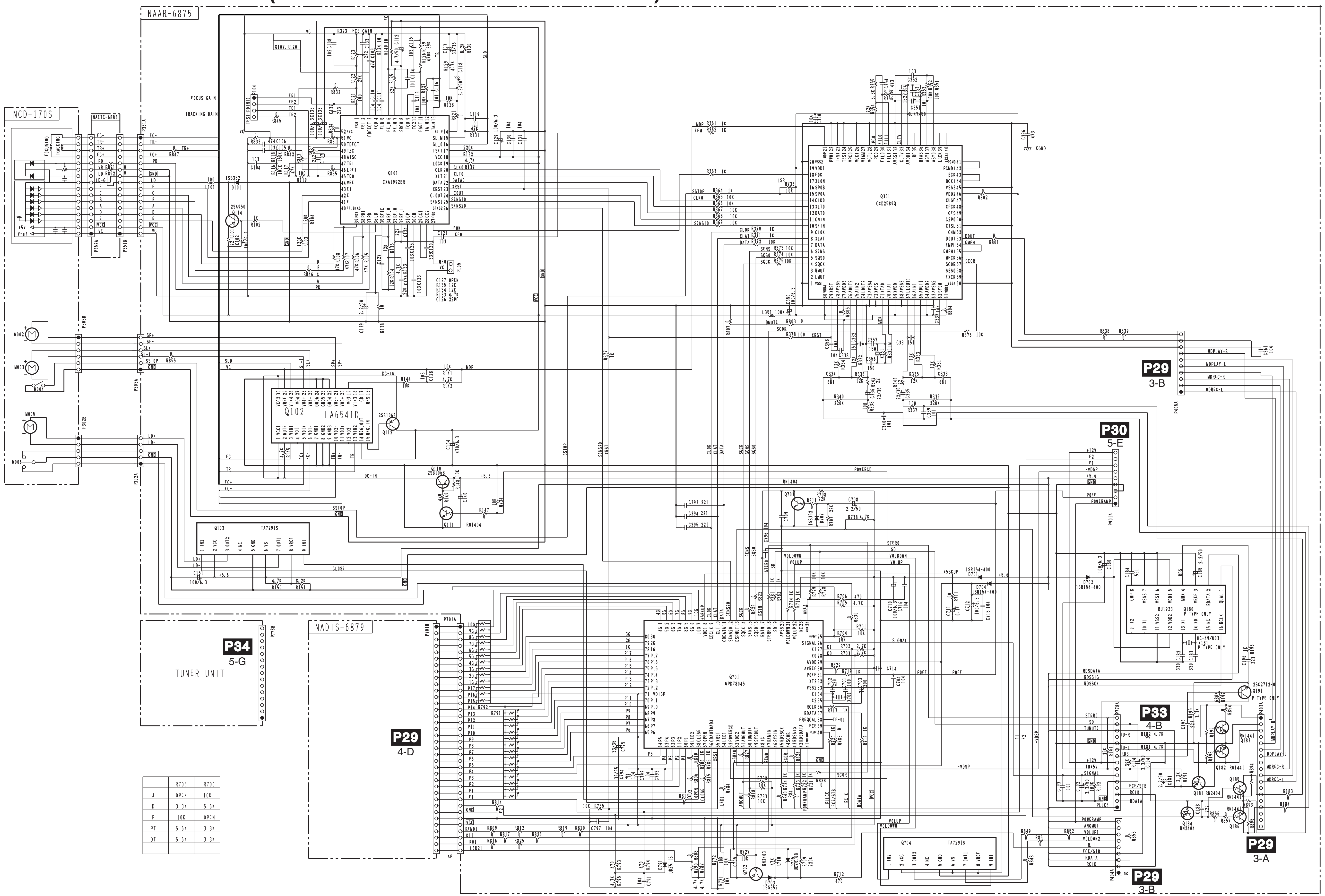
Component side



Soldering side



SCHEMATIC DIAGRAM (CD & MICROPROCESSOR SECTION)

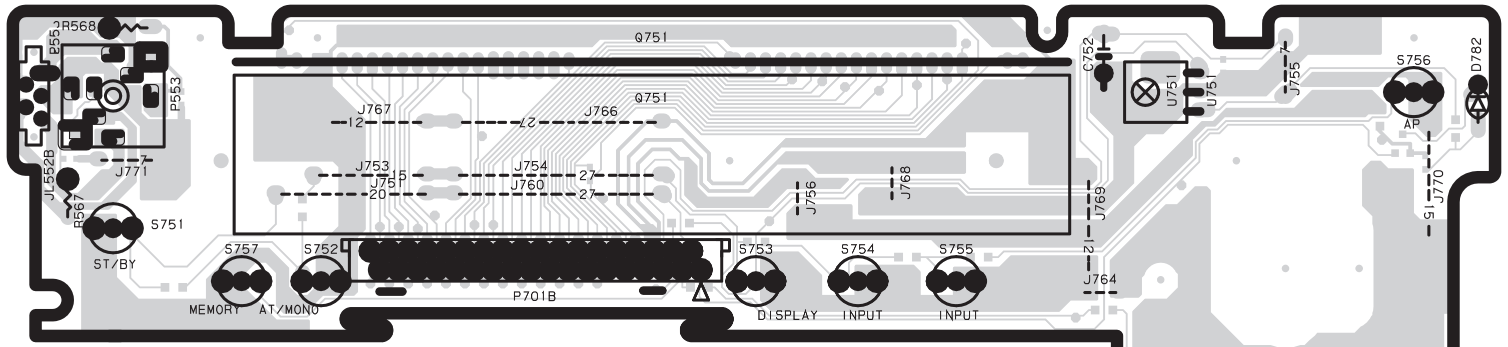


	R705	R706
J	OPEN	10K
D	3.3K	5.6K
P	10K	OPEN
PT	5.6K	3.3K
DT	5.6K	3.3K

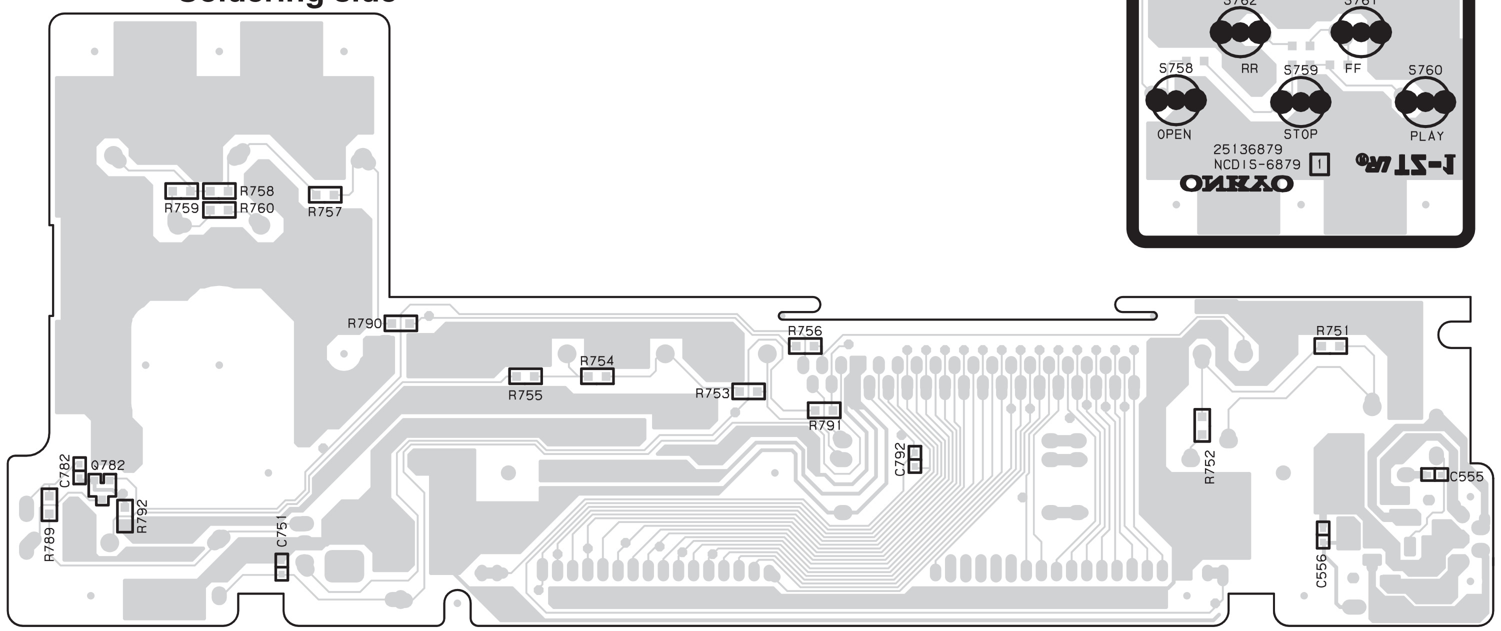
PRINTED CIRCUIT BOARD VIEW 2

U3 DISPLAY CIRCUIT PC BOARD (NADIS-6879)

Component side

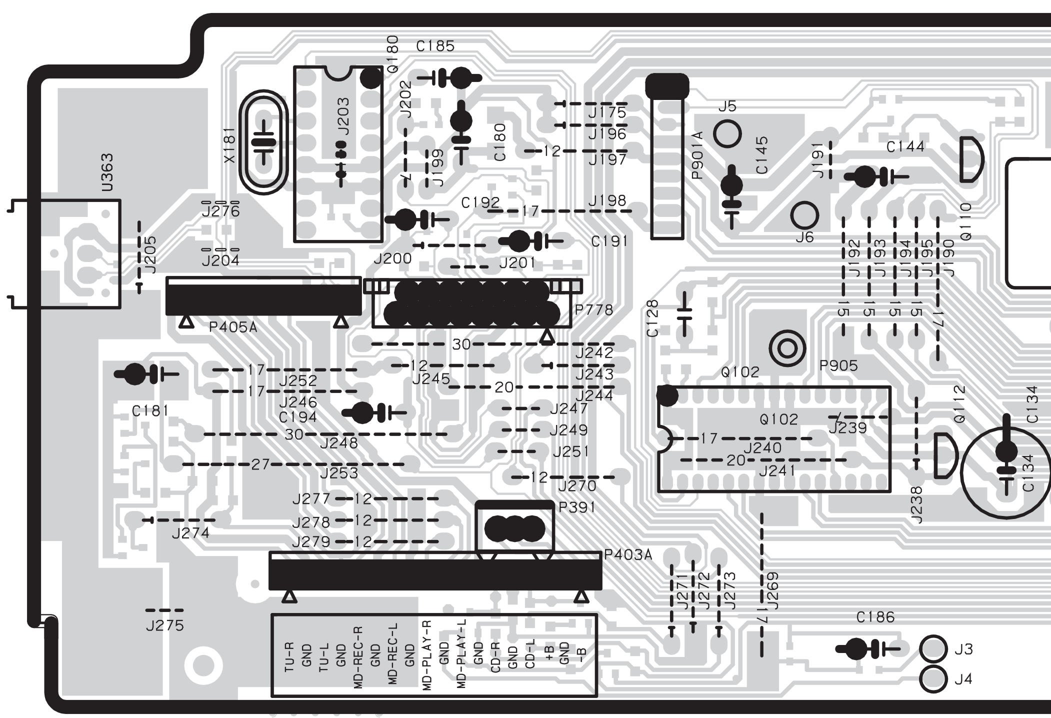


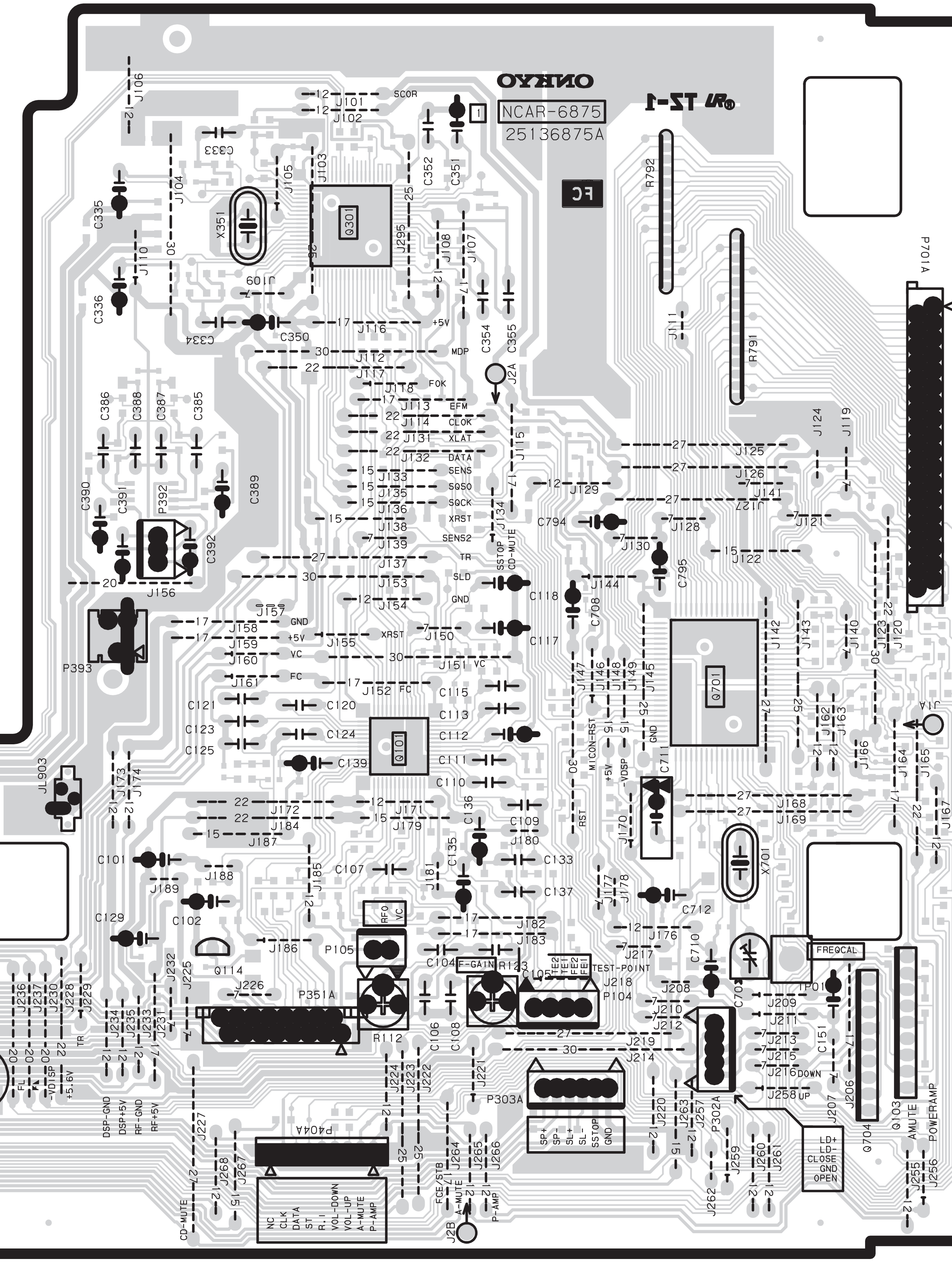
Soldering side



U8 CD CIRCUIT PC BOARD (NAAR-6875)

Component side



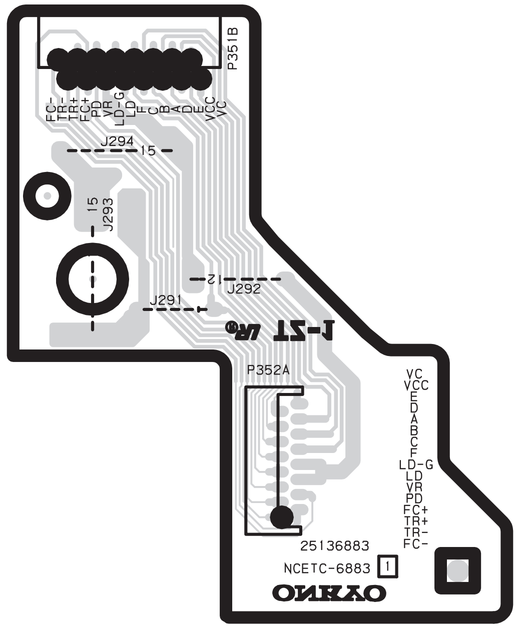


A B C D E F G

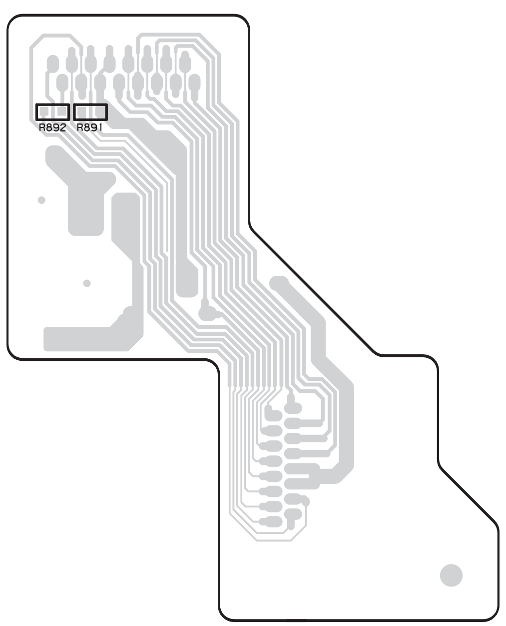
PRINTED CIRCUIT BOARD VIEW 3

U9 CONNECTOR PC BOARD (NAETC-6883)

Component side

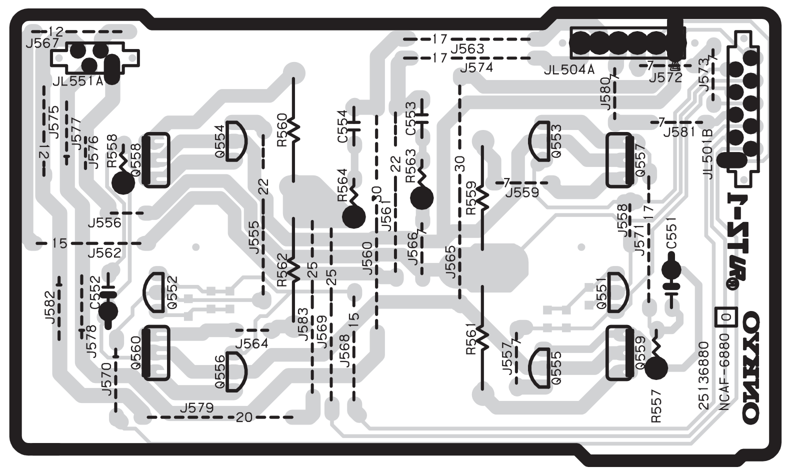


Soldering side

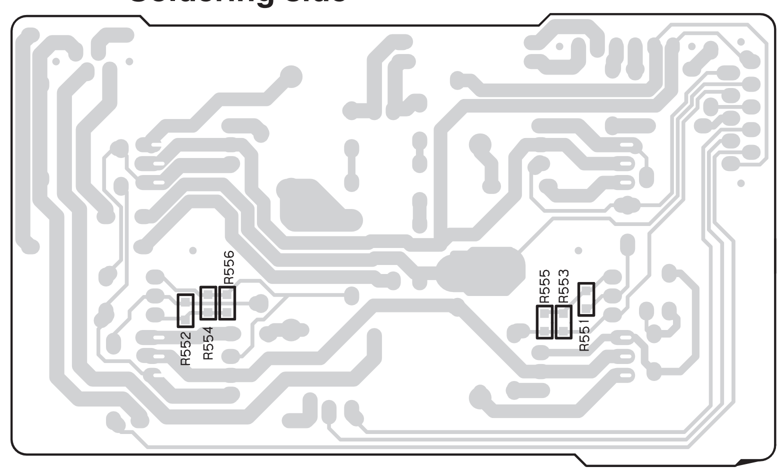


U4 POWER AMPLIFIER PC BOARD (NAAF-6880)

Component side

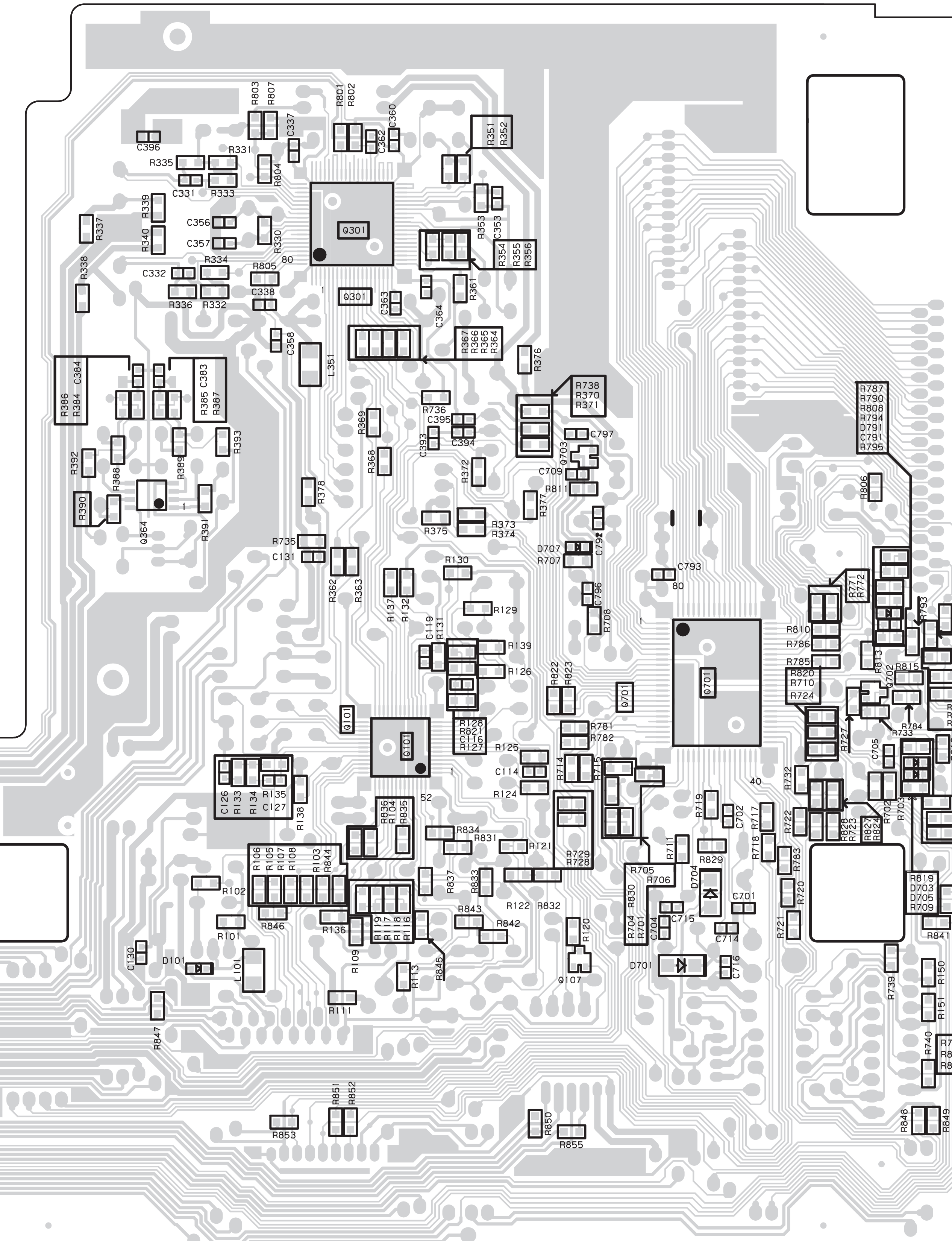
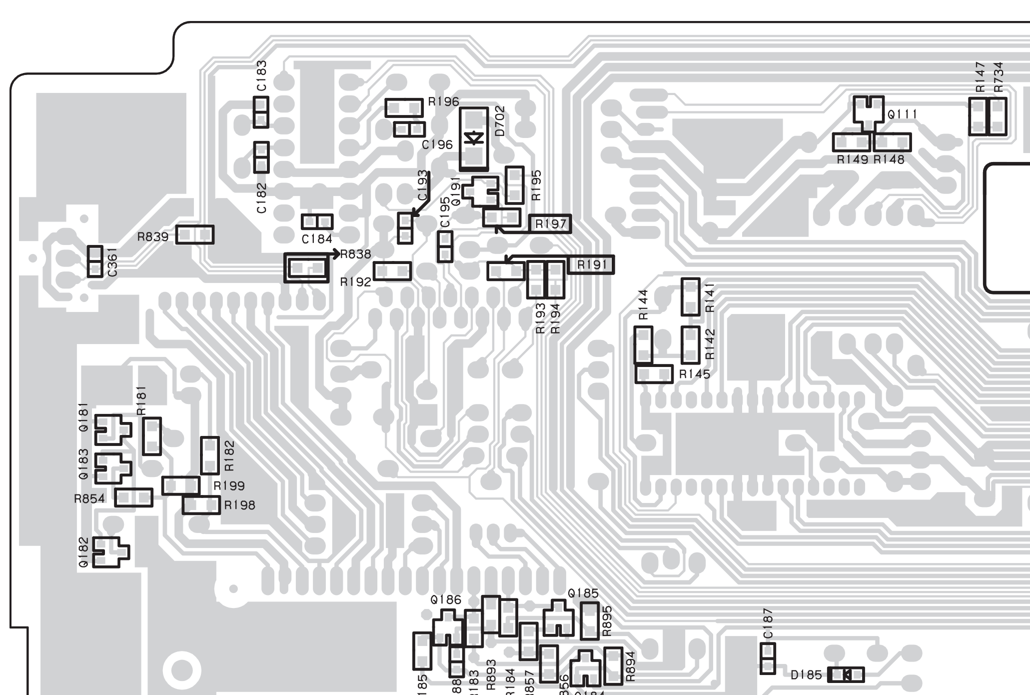


Soldering side



U8 CD CIRCUIT PC BOARD (NAAR-6875)

Soldering side

CD ADJUSTMENT PROCEDURES

Preparation

Set the trimming resistors R123 to center.

Focus gain adjustment

1. Set the output of the audio oscillator to 1 kHz and 1～1.5 VP-P
2. Connect the oscilloscope and audio oscillator as shown below. (Refer to Fig-1)
3. Load the test disc YEDS-18 on the tray and play the track 2.
4. Adjust the trimming resistor R123 so the signal of channel 2 on the oscilloscope becomes 1.25 times of channel 1. (Refer to Fig-2)
5. Remove the oscilloscope and audio oscillator.

* The adjustment of focus offset adjustment is unnecessary.

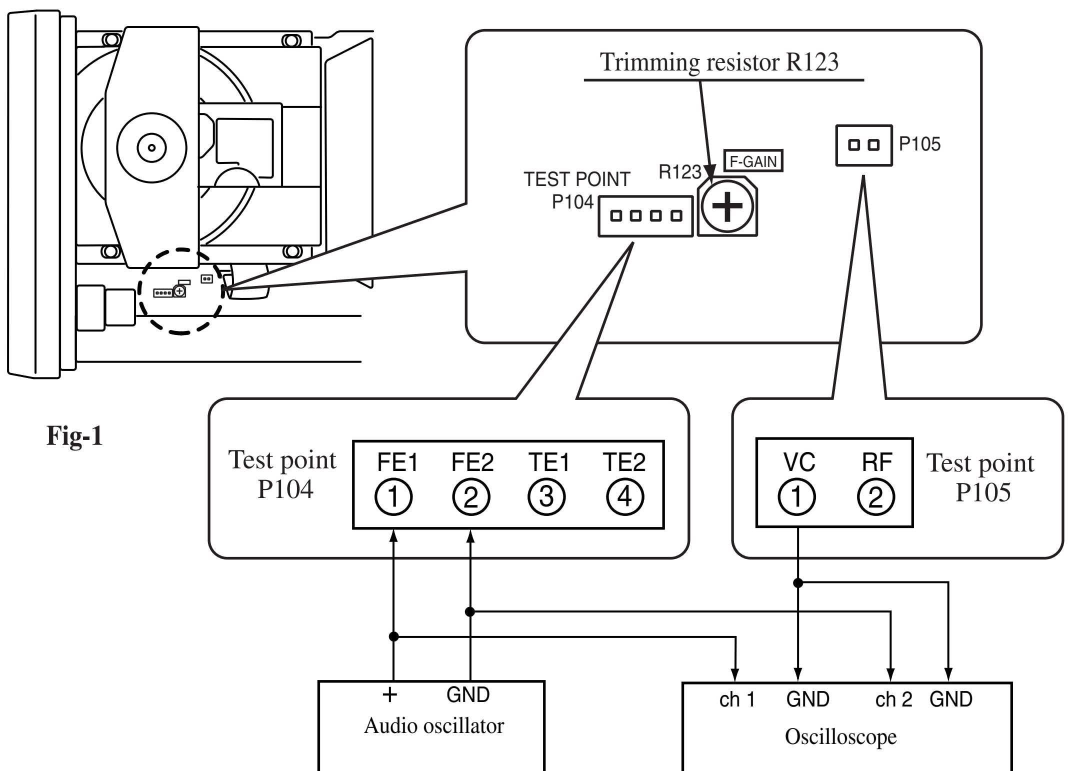


Fig-1

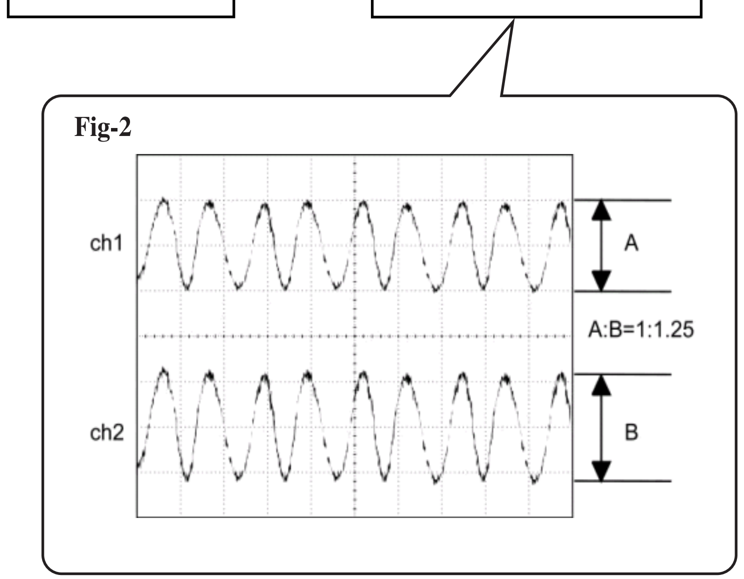
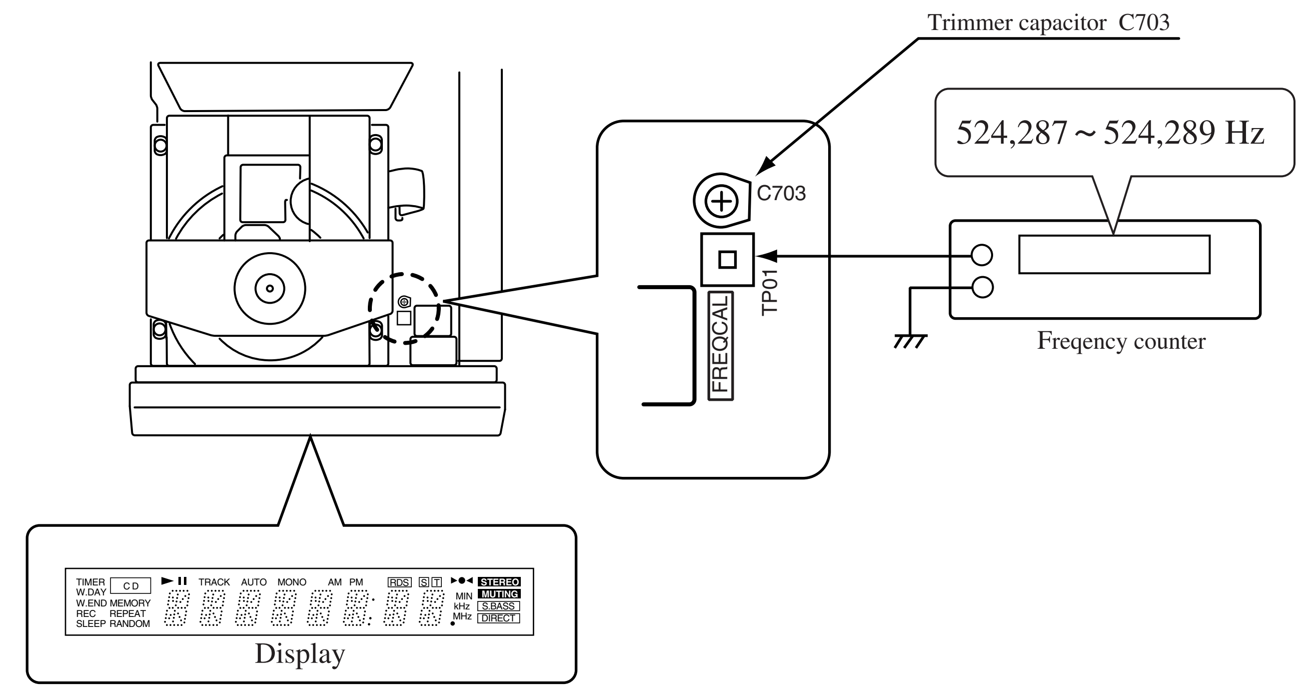


Fig-2

CLOCK ADJUSTMENT PROCEDURES

1. Connect the frequency counter to the terminal TP01 on main PC board (NAAR-6875)
2. Press and hold down the MEMORY button , then press the DISPLAY button.
   (All segments on FL tube light on)
3. Adjust the trimmer capacitor C703 so that the reading of frequency counter becomes 524.288 kHz ± 1Hz.



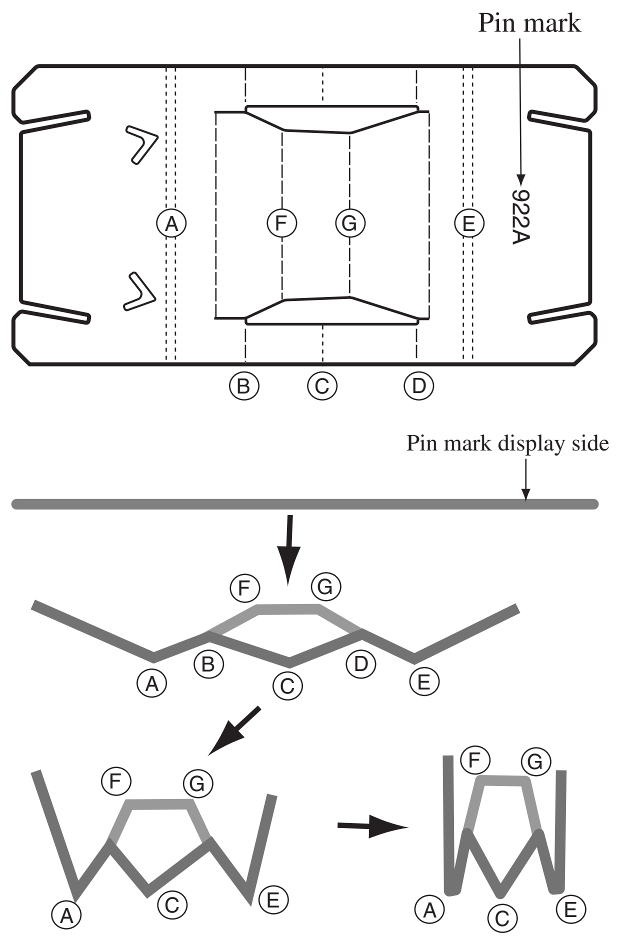
ASSEMBLING OF PAD

Pad is folded.

PAD (Part No. 29091922A)

········ : Line shows folding direction

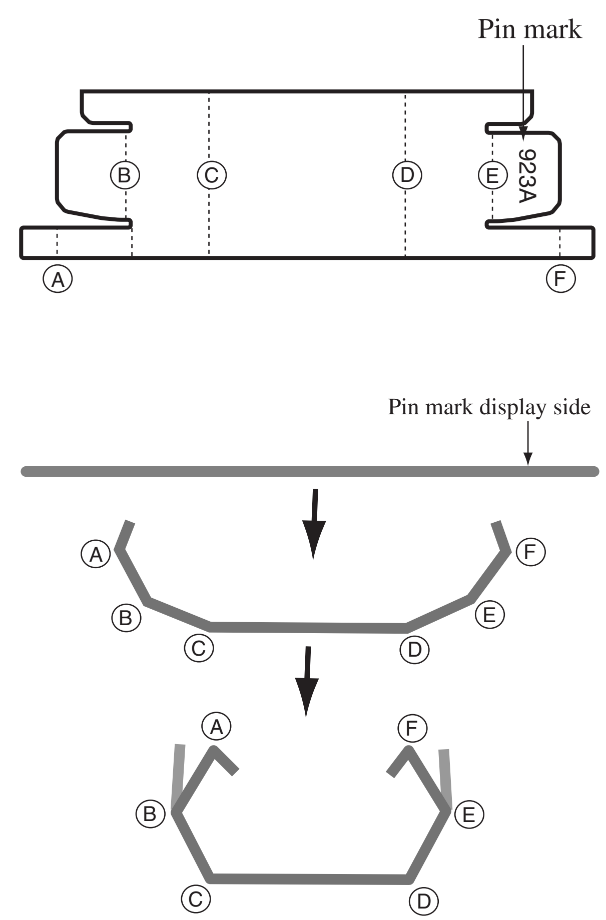
– – – : Line shows folding direction



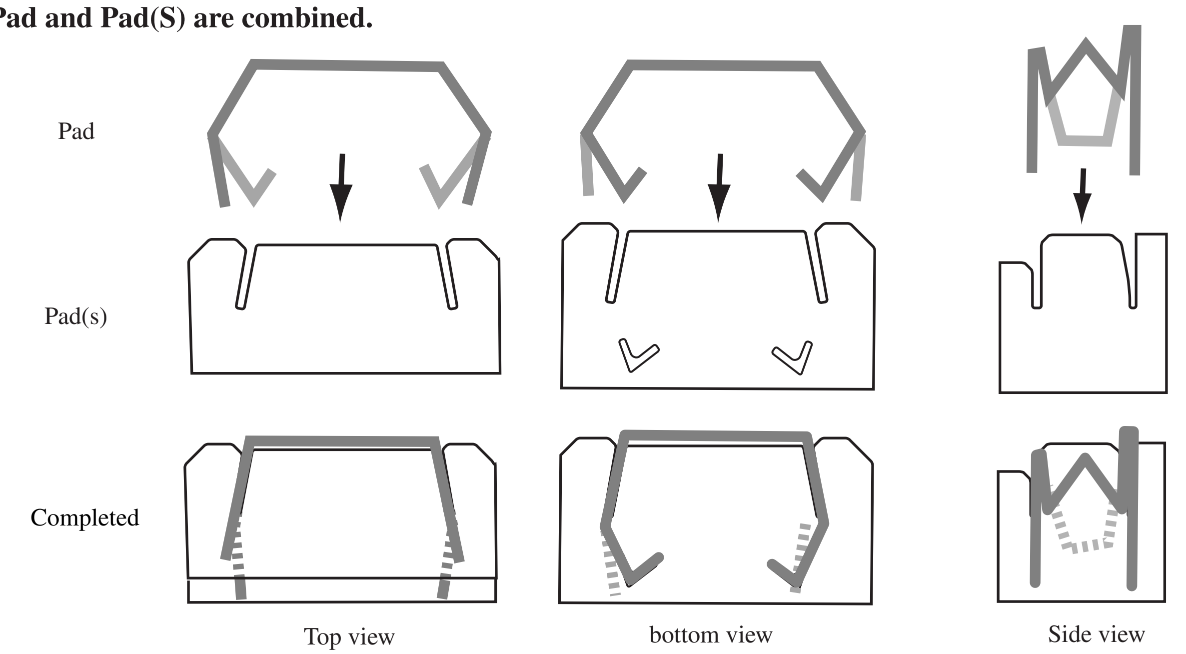
Pad(S) is folded.

PAD (S) (Part No. 29091923A)

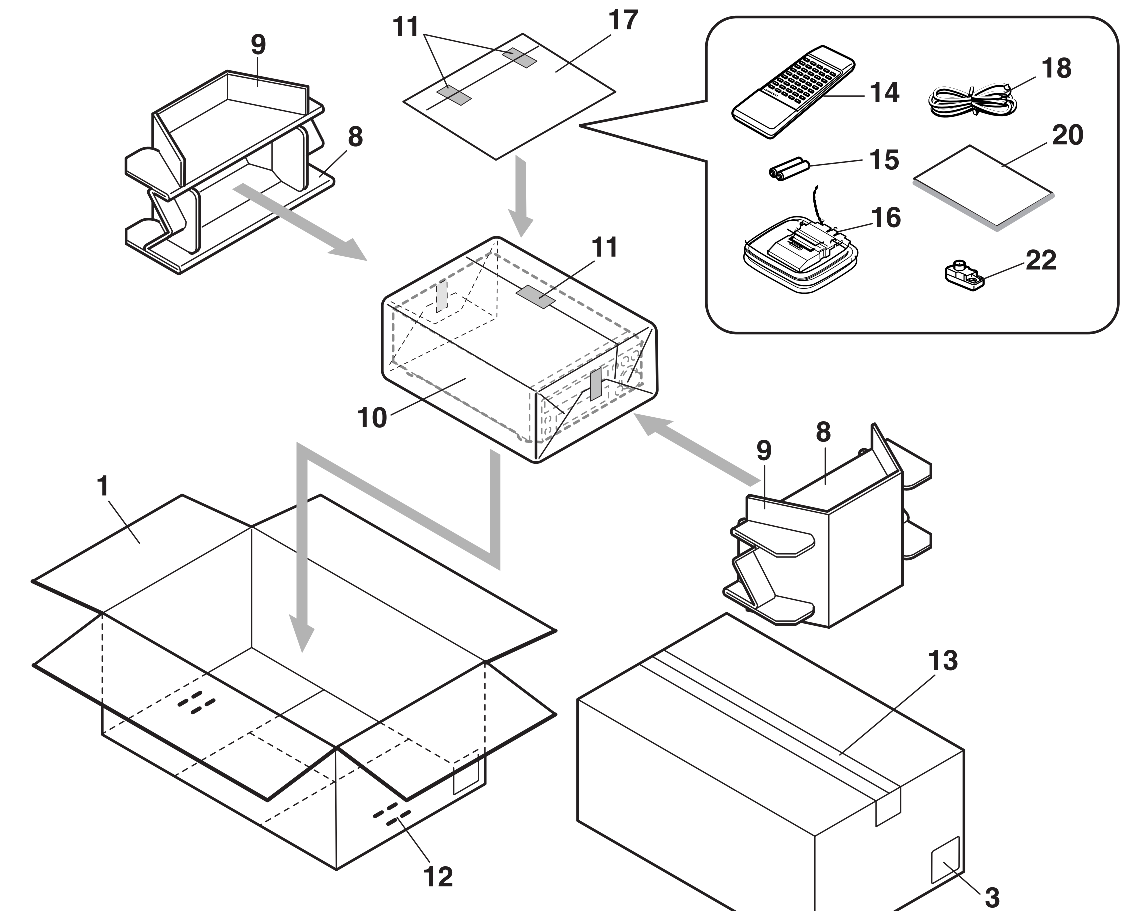
········ : Line shows folding direction



Pad and Pad(S) are combined.



PACKING VIEW



PACKING VIEW PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
1	29053603B	Carton box<D,DT,GT>
	29053649A	Carton box<GR>
	29053604B	Carton box<P>
3	29362647	Label UPC<D>
	29362646	Label EAN<GR,GT,P,DT>
8	29091922A	Pad
9	29091923A	Pad (S)
10	29095835	Sheet 0.515*650*550
11	29110149	Tape
12	282301	Staple
13	29110141	PP Tape
14	24140421	RC-421S, Remote controller
15	3010054	Battery, UM-3
16	232140	NMA-3057,AM Loop antenna
17	29100097-1A	Poly bag 350*250
18	292142	FM antenna<D>
	292116	FM antenna<GR,GT,P,DT>
20	29342905	Instruction manual E
	29342906	Instruction manual U3FSI<P>
	29342907	Instruction manual U3GDSW<P>
	29342926	Instruction manual T<GR,GT,DT>
22	25065462	YAE21-0237,Antenna adapter<GR,GT,P,DT>

NOTE : <D> : USA & Canadian models
<DT> : Taiwanese model only
<P> : European model only
<GR> : Chinese model only
<GT> : Asian model only

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